MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
VOLODYMYR DAHL EAST UKRAINIAN NATIONAL UNIVERSITY

Methodical instructions
for the performance of control work No. 2

in the discipline "Intellectual Property and Commercialization of Scientific Research"

(for applicants for the 3rd (educational and scientific) level of higher education specialty 073 "Management")

(Electronic edition)

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The guidelines contain general requirements for the design of a test paper, examples of solving typical problems, and options for completing a test paper.

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INTRODUCTION

The academic discipline "Intellectual Property and Commercialization of Scientific Research" is a component of the training of applicants for the 3rd (educational and scientific) level of higher education in the field of study "Law".

The performance of a test is a component of the educational process, an active form of practical work of higher education students.

The purpose of the control work is to systematize, consolidate and expand the practical knowledge of higher education students in the discipline "Intellectual Property and Commercialization of Scientific Research", as well as to master the skills of independent study of the discipline.

1. GENERAL REQUIREMENTS FOR EXECUTION AND DESIGN CONTROL WORK

The test should be completed in electronic form on A4 sheets (font size 14, line spacing one and a half), on one side. Recommended margins: left - 30 mm, top - 20 mm, right - 10 mm, bottom - 20 mm.

All pages of the work are numbered, without gaps, repetitions and letter additions. The first page is considered to be the title page, on which the number "1" is not put, and the general numbering begins on the next page (assignment for the test) with the number "2". The page number is indicated in the lower right corner of the page without a period at the end.

The paper must include the option number and the full text of the tasks.

The number of the test variant is defined in an additional file on the moodl platform. Each version of the test consists of one calculation task. The variants of the test are given in appendix. B of these guidelines.

The calculation task should be accompanied by step-by-step explanations. Repeated calculations should be presented in tabular form. When determining the numerical values of quantities, the units of measurement should be indicated. At the end of the calculation, you should draw a conclusion.

The following sequence is used to complete a test paper:

1) cover page (Appendix A);
2) tasks for the test (Appendix B);
3) problem solving (solution with all explanations, final answer, conclusion).

2. EXAMPLES OF SOLVING TYPICAL PROBLEMS

Example problem 1.

An entity plans to sell a license to manufacture a new product with the following production volumes: -1st year - 12 thousand units, 2nd year - 14 thousand units, 3rd year - 13 thousand units. The price of a unit of production by years will be 800 UAH, 840 UAH, 850 UAH, respectively. Determine the cost of the license, if the royalty rate is 30% of the volume of products sold. The discount rate is 20%.

Solution.

Indicators.	1 year	2 years	3 years
Production volume thousand units.	12	14	13
Product price UAH/unit	800	840	850
Revenue thousand UAH/year	9600	11760	11050
Royalties thousand UAH/year	2880	3528	3315
Discount factor	1	0,833	0,694
Presented royalties, thousand UAH/year	2880,00	2938,824	2300,61

The cost of the license: UAH 2808 + 2798.88 + 3082.87 = 8119.434 thousand.

Answer: The cost of the license is UAH 8119,434 thousand.

Example problem 2: Determine the value of a trademark if a marketing study has shown that as of the date of valuation the selling price of 1 unit of product is UAH 150 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is -20% and the income tax rate is 18%. The capitalization ratio is 30%. The physical volume of sales of products for the year under this trademark is 500 thousand units.

Solution.

The net economic effect per pack consists of the advantage in selling price excluding VAT and income tax:

$E_{ч} = 150 \cdot (1 - 0{,}2) \cdot (1 - 0{,}18) = 98{,}4$ UAH.

Annual economic effect from sales of products under the trademark, including price advantage:

$E_p = 500 \cdot 98{,}4 = 49200$ thousand UAH.

The use of a trademark will provide the company with a capitalization ratio:

$B_{mз} = \frac{49200}{0{,}3} = 164000$ thousand UAH or UAH 164 million

Answer: the value of the trademark will be UAH 164 million.

Example 3: Determine the price of an industrial property item that has no prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 200 thousand UAH, 2nd year - 100 thousand UAH, 3rd year - 50 thousand UAH), 2nd element (3rd year - 150 thousand UAH, 4th year - 150 thousand UAH), 3rd element (5th year - 200 thousand UAH, 6th year - 200 thousand UAH, 7th year - 50 thousand UAH). The standard term of validity of a security document from the date of declaration of an idea is 20 years. The multiplication factor is 10%.

Solution:

Structural element	Replacement cost (UAH thousand) by years							Amount
	1 year	2 years	3 years	4 years	5 years	6 years	7 years	
1	200	100	50					
Д1	354,32	161,05	73,205					588,575
2			150	150				
Д2			219,615	199,65				419,265
3					200	200	50	
Д3					242	220	50	512
KD	1,7716	1,6105	1,4641	1,3310	1,2100	1,1000	1	1519,54

The price of the industrial property:

$$Ц_o = \sum_{n}^{к} (Ц_i \cdot КД) \cdot К_c \cdot К_з,$$

Where:

$Ц_i$ - price of the element (stage);

$КД$ - discount factor;

$К_c$ - Ageing coefficient, $К_c = 1 - \frac{T_ф}{T}$;

$K_з$ - The significance coefficient if there is no prototype is 1.3, the basic variant is 1.2, and the auxiliary variant is 1.1.

$Ц_о = 1519{,}54 \cdot (1 - \frac{7}{20}) \cdot 1{,}3 = 1284{,}205$ thousand UAH.

Answer: The price of the industrial property will be UAH 1284.205 thousand

Example 4. Based on the technical and economic indicators, give a conclusion on the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 12%, an increase in the number of key production personnel by 6%, a rise in the cost of equipment by 3.6%, an increase in the cost of working capital by 2.5%, and a decrease in the unit cost of production by 7.5%.

Data from existing production:

- production volume - 192 thousand units;
- The unit price is UAH 540;
- The value of fixed production assets is UAH 36 million, including UAH 16.2 million of fixed equipment;
- The value of working capital is UAH 3.38 million;
- The average number of employees is 125 people, including 80 key production personnel and 35 on-call personnel.
- production cost - UAH 420 per unit.

The production operates on a 4-team schedule. The effective working hours of employees in continuous production and on a 5-day working week are assumed to be 1928 and 1853 hours, respectively.

Solution:

1) Annual production volume.

For existing production

- in value terms: $V_в = 540 \cdot 192 = 103680$ thousand UAH/unit.

For the projected production

- In physical terms: $V_{пп} = 192 \cdot 1{,}12 = 215{,}04$ thousand units.

- in value terms: $V_{пв} = 103680 \cdot 1{,}12 = 116121{,}6$ thousand UAH/unit.

2) Number of employees.

For existing production:

- number of other staff: $Ч_{ін.д} = 125 - 80 - 35 = 10$ people.

For projected production:

- number of key employees: $Ч_{о.д.} = 80 \cdot 1{,}06 = 84{,}8 = 85$ people.

- headcount: $Ч_{обл.д.} = 85 + 35 + 10 = 130$ people.

The relative change in the indicator is calculated by the formula: $\Delta = \frac{П - Д}{Д} \cdot 100\%$,

where - *P*, *D* - indicators of projected and existing production, respectively.

- change in the number of employees: $\Delta = \frac{130 - 125}{125} = 4\%$.

3) Let's calculate the labor intensity of a unit of production using the formula:

$$\tau = \frac{Теф_1 \cdot Ч_1 + Теф_2 \cdot Ч_2}{V};$$

where

$Теф_{1,2}$	-	effective working time fund for employees working a 5-day week and continuously
$N_{1,2}$	-	number of employees working a 5-day week and continuously

For existing production: $\tau = \frac{1928 \cdot (80 + 35) + 1853 \cdot 10}{192000} = 1{,}2513$ man-hours/unit.

For projected production:

$$\tau = \frac{1928 \cdot (85 + 35) + 1853 \cdot 10}{215040} = 1{,}162 \text{ man-hours/unit.}$$

$$\Delta = \frac{1{,}162 - 1{,}2513}{1{,}2513} \cdot 100\% = 7{,}137\%$$

4) Let's calculate labor productivity using the formula: $П = \frac{V_н}{Ч}$

For existing production:

- all employees: $П = \frac{192000}{125} = 1536$ units/person.

- of key employees: $П = \frac{192000}{80} = 2400$ units/person.

For projected production:

- all employees: $П = \frac{215040}{130} = 1654{,}15$ units/person.

- of key employees: $П = \frac{215040}{85} = 2529{,}88$ units/person.

$$\Delta = \frac{2529{,}88 - 2400}{2400} \cdot 100\% = 5{,}41\%$$

$$\Delta = \frac{1654{,}15 - 1536}{1536} \cdot 100\% = 7{,}69\%$$

5) The cost of equipment for the projected production:

$B_{обл.п} = 16{,}2 \cdot 1{,}036 = 16{,}7832$ million UAH.

Based on the task, the cost of the equipment increased by 3.6%.

6) The cost of fixed assets of the projected production:

$B_{оф.пр} = 16{,}7832 \cdot (36 - 16{,}2) = 36{,}5832$ million UAH.

$$\Delta = \frac{36{,}5832 - 36}{36} \cdot 100\% = 1{,}62\% .$$

7) The return on fixed assets is calculated using the formula $f_O = \frac{V_p}{B_{оф}}$.

For existing production: $f_O = \frac{103680000}{36000000} = 0{,}288$

For projected production: $f_O = \frac{116121600}{365832000} = 0{,}317$.

$$\Delta = \frac{0{,}317 - 0{,}288}{0{,}288} \cdot 100\% = 10{,}069\%$$

8) The cost of working capital of the projected production:

$B_{ок.пр} = 3{,}38 * 1{,}025 = 3454500$ million UAH.

9) Unit cost of the projected production:

$C_{пр} = 420 \cdot 0{,}925 = 388{,}5$ UAH based on the task condition.

10) Profit per unit of production:

For existing production: $П_д = 540 - 420 = 120$ UAH/unit.

For projected production: $П_{пр} = 540 - 388{,}5 = 151{,}5$ UAH/unit.

$$\Delta = \frac{151{,}5 - 120}{120} \cdot 100\% = 26{,}25\%$$

11) Calculate the return on production costs using the formula:

$$P = \frac{П}{C} \cdot 100\% .$$

For existing production: $P_д = \frac{120}{420} \cdot 100\% = 28{,}57\%$

For projected production: $P_{пр} = \frac{151,5}{388,5} \cdot 100\% = 38,996\%$,

$\Delta = 38,996 - 28,57 = 10426\%$.

12) Payback period of additional capital expenditures, years:

$$\text{Ток} = \frac{K}{\Delta \text{Пр}} = \frac{K}{V_{\text{пр}} \cdot П_{\text{пр}} \text{-V}_{\partial}.П_{\partial}} = \frac{16783200 - 16200000}{151,5 \cdot 215040 - 120 \cdot 192000} = 0,06$$

13) Annual economic effect:

- from lower unit costs:

$E = \Delta C \cdot V_{пр} = (420 - 388,5) \cdot 215040 = 6773760$ UAH.

- from an increase in annual profits:

$151,5 \cdot 215040 - 120 \cdot 192000$= UAH 9538560.

Let's summarize the results of the calculations in a table.

Technical and economic calculations

Indicators.	Unit of measurement.	Production in operation	Projected production	Change in the indicator, %.
1. Annual production volume:				
- in value terms	thousand UAH	103680	116121,6	12,0
- in physical terms	thousand units.	192,0	215,04	12,0
2. Headcount, including	people.	125	130	4,0
- main workers		80	85	6,0
- duty staff		35	35	-
- others		10	10	-
3. Labor intensity per unit of production	man-hours/unit	1,2513	1,162	-7,137
4. Labor productivity	units/person.			
- all employees		1536	1656,7	7,69
- main workers		2400	2535,7	5,41
5. Cost of fixed assets, incl.	million UAH.	36,0	36,5835	1,62
- cost of equipment	million UAH.	16,2	16,7835	3,6
6. Stock return	UAH/UAH.	0,288	0,317	-5,2
7.Cost of current assets	million UAH.	3,38	3,4645	2,5
8. Cost per unit of output	UAH/unit.	420,0	388,5	-7,5
9. Profit per unit of output	UAH/unit.	120,0	151,5	26,25

Indicators.	Unit of measurement.	Production in operation	Projected production	Change in the indicator, %.
10. Return on production costs	%	28,57	38,996	10,426
11. Payback period of capital expenditures	years	-	0,06	-
12. Annual economic effect of reducing production costs; From increased profits			6773760 9538560	

Thus, an increase in annual production capacity by 12.0% and a decrease in unit costs by 3.6% resulted in a 26.25% increase in profit per unit and a 10.4260% increase in the return on production costs. Given the increase in the number of key employees by 6% and the number of employees on the payroll by 4.0%, the productivity of key employees and all employees will increase by 7.69% and 5.41%, respectively. At the same time, the labor intensity per unit of output will decrease by 7.137%. However, as a result of the fact that the cost of equipment, and therefore fixed assets, increased to a greater extent than the annual production volume, the return on fixed assets decreased by 5.2%. The payback period for the additional capital expenditure is 6.114 years. The annual economic effect from cost reduction will amount to UAH 6773,760 thousand, and from profit increase - UAH 9538,560 thousand. Thus, the implementation of this project is expedient.

3. CRITERIA FOR ASSESSING THE TEST WORK

After receiving the assignment, the student completes the test using the recommended methodology. In case of any questions or problems with writing the paper, the student seeks advice from the teacher according to the teacher's consultation schedule.

The finished test work must be uploaded to the moodle platform in the appropriate block. The deadline for completing the work is specified in the deadline settings on the moodle platform.

The test is considered to be passed if the calculation is correct.

Works that are not accepted for review or returned for revision are not accepted:

– are not fully implemented;

– were made with gross errors;

– issued without complying with the requirements;

– are not performed independently or do not correspond to the given option (in this case, the student is offered a new option).

When checking a test paper, the teacher makes comments on each item to which an incomplete answer is given or errors are made. The student, having received an unsatisfactory grade, must correct the errors and respond to the teacher's comments, after which the work is resubmitted.

APPENDIX A

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

VOLODYMYR DAHL EAST UKRAINIAN NATIONAL UNIVERSITY

Faculty of Economics and Management

Department of Economics and Entrepreneurship

Control work
in the discipline

INNOVATIVE PROPERTY AND COMMERCIALIZATION SCIENTIFIC RESEARCH

Option ___.

Group _____

Applicant _____

20__/20__ academic year

ANNEX B

Options for control work

Option 1

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 7 thousand units, 2nd year - 8 thousand units, 3rd year - 8.5 thousand units, 4th year - 8 thousand units. The price per unit of production for each year will be 650 UAH, 650 UAH, 620 UAH and 610 UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% in years 1 and 2, and 25% of the volume of sales in years 3 and 4. The discount rate is 20%.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 6.56 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 23%. The physical volume of sales of products under this trademark for the year is 125,000 units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 18 thousand UAH, 2nd year - 20 thousand UAH, 3rd year - 50 thousand UAH), 2nd element (2nd year - 50 thousand UAH, 3rd year - 50 thousand UAH), 3rd element (3rd year - 56 thousand UAH, 4th year - 83 thousand UAH, 5th year - 32 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 26 years. The discount rate is 22%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 15%, a reduction in the number of key production personnel by 5%, a rise in the cost of equipment by 3.5%, an increase in the cost of working capital by 51%, and a decrease in the cost per unit of production by 8%.

Data from existing production:

1) production volume - 40 thousand units;

2) the unit price is UAH 350;

3) the value of fixed production assets at the beginning of the year was UAH 5.6 million, including fixed equipment - UAH 2.52 million.

4) the cost of working capital - UAH 3.64 million;

5) the average number of employees is 120 people, including 80 key production personnel.

6) cost of production - UAH 250 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 2

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 25 thousand units, 2nd year - 26 thousand units, 3rd year - 24 thousand units, 4th year - 23 thousand units. The price per unit of production for each year will be 1750 UAH, 1800 UAH, 1790 UAH and 1780 UAH, respectively. Determine the possible cost of the license, if the royalty rate is 30% of the volume of products sold. The discount rate is 20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 56 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products for the year under this trademark is 750000 units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 80 thousand UAH, 2nd year - 70 thousand UAH, 3rd year - 50 thousand UAH), 2nd element (2nd year - 50 thousand UAH, 3rd year - 70 thousand UAH), 3rd element (4th year - 180 thousand UAH, 5th year - 90 thousand UAH, 6th year - 50 thousand UAH). The standard term of validity of a title of protection from the date of declaration of an idea is 30 years. The discount rate is 20%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 10%, a reduction in the number of key production personnel by 2%, a rise in the cost of equipment by 6%, a decrease in the cost of working capital by 5%, and a decrease in the cost per unit of production by 5%.

Data from existing production:

1) production volume - 20,000 units;

2) the unit price is UAH 2000;

3) the value of fixed production assets at the beginning of the year was UAH 25 million, including fixed equipment - UAH 11.25 million.

4) value of current assets - UAH 9.744 million;

5) the average number of employees is 190 people, including 100 key production personnel.

6) cost of production - UAH 1200 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 3

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year -125 thousand units, 2nd year -140 thousand units, 3rd year -138 thousand units, 4th year - 130 thousand units The price per unit of production for each year will be 250 UAH, 260 UAH, 255 UAH and 245 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of sales. The conversion factor is 18% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 45 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is -20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products for the year under this trademark is 750000 units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 200 thousand UAH, 2nd year - 100 thousand UAH), 2nd element (3rd year - 50 thousand UAH), 3rd element (3rd year - 150 thousand UAH, 4th year - 150 thousand UAH), 4th element (5th year - 200 thousand UAH, 6th year - 200 thousand UAH, 7th year - 50 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 25 years. The discount rate is 18%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 10%, an increase in the number of key production personnel by 7%, a decrease in the cost of working capital by 2%, a rise in the cost of equipment by 6.5%, and a decrease in the cost per unit of production by 7%.

Data from existing production:

1) production volume - 150000 units;

2) the unit price is UAH 1200;

3) the value of fixed production assets - UAH 45 million, including equipment - UAH 20.25 million;

4) the cost of current assets - UAH 48195 thousand;

5) the average number of employees is 212 people, including 100 key production personnel.

6) cost of production - UAH 850 per unit.

The production operates on a 4-team schedule. The effective working hours of employees in continuous production and on a 5-day working week are 1928 and 1853 hours, respectively.

Option 4

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: Year 1 - 22 thousand units, Year 2 - 24 thousand units, Year 3 - 23 thousand units, Year 4 - 22 thousand units. The price per unit of production for each year will be 1250 UAH, 1230 UAH, 1220 UAH and 1220 UAH, respectively. Determine the possible value of the license if the royalty rate is 26% in years 1 and 2, and 27% of the volume of sales in years 3 and 4. The conversion factor is 19%.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 40 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 20%. The physical volume of sales of products for the year under this trademark is 230 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 200 thousand UAH, 2nd year - 100 thousand UAH), 2nd element (3rd year - 50 thousand UAH), 3rd element (3rd year - 150 thousand UAH, 4th year - 150 thousand UAH), 4th element (5th year - 200 thousand UAH, 6th year - 200 thousand UAH, 7th year - 50 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 18%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 30%, a rise in the cost of equipment by 14.4%, an increase in the cost of current assets by 6%, a decrease in the unit cost of production by 5%, and a reduction in the number of key employees by 10%.

Data from existing production:

1) production volume - 120 thousand units;

2) the unit price is UAH 520;

3) the value of fixed production assets - UAH 31.2 million, including fixed equipment - UAH 15 million;

4) the cost of working capital - UAH 3.24 million;

5) the average number of employees is 240 people, including 160 key production personnel.

6) cost of production - UAH 420 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 5

1. A company plans to sell a license to manufacture a new product at the following production levels: 1st year -150 thousand units, 2nd year -145 thousand units, 3rd year -130 thousand units, 4th year - 130 thousand units The price per unit of production for each year will be 400 UAH, 450 UAH, 440 UAH and 420 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The discount rate is 18% in years 1 and 2, and 19% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 26 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 24%. The physical volume of sales of products under this trademark for the year is 140 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 80 thousand UAH, 2nd year - 80 thousand UAH, 3rd year - 80 thousand UAH), 2nd element (2nd year - 40 thousand UAH, 3rd year - 60 thousand UAH), 3rd element (4th year - 120 thousand UAH, 5th year - 60 thousand UAH, 6th year - 80 thousand UAH). The standard term of validity of a title of protection from the date of declaration of an idea is 20 years. The discount rate is 20%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 4.5%, with a reduction in the number of key employees by 5%, a 25% increase in the cost of equipment, a 3% increase in the cost of working capital, and a 4.8% reduction in the unit cost of production.

Data from existing production:

1) production volume - 4000 units;

2) the unit price is UAH 2000;

3) the value of fixed production assets is UAH 4 million, including fixed equipment - UAH 2.4 million.

4) value of working capital - UAH 3.584 million;

5) the average number of employees is 220 people, including 120 key production personnel.

6) cost of production - UAH 1600 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 6

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 125 thousand units, 2nd year - 126 thousand units, 3rd year - 124 thousand units, 4th year - 123 thousand units. The price per unit of production for each year will be 1700 UAH, 1800 UAH, 1750 UAH and 1700 UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is 20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 75 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products under this trademark for the year is 550 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 182 thousand UAH, 2nd year - 200 thousand UAH, 3rd year - 150 thousand UAH), 2nd element (2nd year - 150 thousand UAH, 3rd year - 80 thousand UAH), 3rd element (3rd year - 156 thousand UAH, 4th year - 123 thousand UAH, 5th year - 132 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 25%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 2%, a reduction in the number of key production personnel by 10%, a rise in the cost of equipment by 16%, an increase in the cost of working capital by 4%, and a decrease in the cost per unit of production by 5%.

Data from existing production:

1) production volume - 18 thousand units;

2) the unit price is UAH 2,450;

3) the value of fixed production assets is UAH 15.75 million, including UAH 9 million of main equipment.

4) the value of current assets - UAH 13608 thousand;

5) the average number of employees is 350 people, including 200 key production personnel.

6) cost of production - UAH 1800 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 7

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 50 thousand units, 2nd year - 60 thousand units, 3rd year - 70 thousand units, 4th year - 60 thousand units. The price per unit of production for each year will be 22 thousand UAH, 22.5 thousand UAH, 22.8 thousand UAH and 23 thousand UAH, respectively. Determine the possible cost of the license if the royalty rate is 20% of the volume of products sold. The discount rate is 20% in the 1st and 2nd years, and 22% in the 3rd and 4th years.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 175 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 28%. The physical volume of sales of products under this trademark for the year is 350 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 20 thousand UAH, 2nd year - 60 thousand UAH, 3rd year - 120 thousand UAH), 2nd element (2nd year - 120 thousand UAH, 3rd year - 180 thousand UAH), 3rd element (3rd year - 60 thousand UAH, 4th year - 60 thousand UAH, 5th year - 19 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 27%.

4**.** On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 3.4%, a reduction in the number of key production personnel by 1.8%, an increase in the cost of equipment by 8.4%, an increase in the cost of working capital by 4%, and a decrease in the cost per unit of production by 2.6%.

Data from existing production:

1) production volume - 18,000 units;

2) the unit price is UAH 1,325;

3) the value of fixed production assets is UAH 22.5 million, including fixed equipment - UAH 10.125 million.

4) value of current assets - UAH 7.892 million;

5) the average number of employees is 190 people, including 100 key production personnel.

6) cost of production - UAH 1080 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 8

1. An entity plans to sell a license to manufacture a new product with the following production volumes: 1st year - 30 thousand units, 2nd year - 35 thousand units, 3rd year - 37 thousand units, 4th year - 37 thousand units. The price per unit of production for each year will be UAH 120, UAH 150, UAH 160 and UAH 170, respectively. Determine the possible cost of the license if the royalty rate is 28% of the volume of products sold. The discount rate is 22% in years 1 and 2, and 24% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 5.6 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 28%. Physical sales of products under this trademark for the year amounted to 340 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 30 thousand UAH, 2nd year - 20 thousand UAH, 3rd year - 10 thousand UAH), 2nd element (2nd year - 15 thousand UAH, 3rd year - 40 thousand UAH), 3rd element (3rd year - 20 thousand UAH, 4th year - 25 thousand UAH, 5th year - 25 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 26%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 2.5%, an increase in the number of key production personnel by 12.4%, a decrease in the unit cost of production by 2.3%, a rise in the cost of equipment by 4.5%, and an increase in the cost of working capital by 3%,

Data from existing production:

1) production volume - 150000 units;

2) the unit price is UAH 1200;

3) the value of fixed production assets is UAH 45 million, including fixed equipment - UAH 20.25 million.

4) the value of current assets - UAH 48195 thousand;

5) the average number of employees is 212 people, including 100 key production personnel.

6) cost of production - UAH 1,020 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 9

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 125 thousand units, 2nd year - 126 thousand units, 3rd year - 124 thousand units, 4th year - 123 thousand units. The price per unit of production for each year will be 1700 UAH, 1800 UAH, 1750 UAH and 1700 UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is -20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 75 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products under this trademark for the year is 550 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 182 thousand UAH, 2nd year - 200 thousand UAH, 3rd year - 150 thousand UAH), 2nd element (2nd year - 150 thousand UAH, 3rd year - 80 thousand UAH), 3rd element (3rd year - 156 thousand UAH, 4th year - 123 thousand UAH, 5th year - 132 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 25%.

4. Based on the technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 12%, a decrease in the cost of equipment by 5%, an increase in the cost of working capital by 8%, a decrease in the number of key employees by 11%, and a decrease in the unit cost of production by 1.5%.

Data from existing production:

1) production volume - 80 thousand units.

2) the unit price is UAH 2,250;

3) the value of fixed production assets is UAH 60 million, including UAH 27 million of main equipment.

4) the cost of working capital is UAH 49.28 million;

5) the average number of employees is 250 people, including 150 key production personnel.

6) cost of production - UAH 1600 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 10

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 25 thousand units, 2nd year - 26 thousand units, 3rd year - 24 thousand units, 4th year - 23 thousand units. The price per unit of production for each year will be 3800 UAH, 3900 UAH, 4000 UAH and 4200 UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is 25% in years 1 and 2, and 27% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 25 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products for the year under this trademark is 250 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - UAH 32 thousand, 2nd year - UAH 20 thousand, 3rd year - UAH 50 thousand), 2nd element (2nd year - UAH 50 thousand, 3rd year - UAH 40 thousand), 3rd element (3rd year - UAH 56 thousand, 4th year - UAH 23 thousand, 5th year - UAH 32 thousand). The standard term of validity of a security document from the date of declaration of an idea is 20 years. The discount rate is 25%.

4. Based on the technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 25%, a rise in the cost of equipment by 12%, a decrease in the unit cost of production by 3.3%, a decrease in the number of key employees by 18%, and an increase in the cost of working capital by 10%.

Data from existing production:

1) production volume -100 thousand units;

2) the unit price is UAH 500;

3) the value of fixed production assets - UAH 26 million, including fixed equipment - UAH 12.5 million;

4) the cost of working capital - UAH 2.7 million;

5) to increase the number of employees to 300, including 200 key production personnel.

6) cost of production - UAH 350 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 11

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 8 thousand units, 2nd year - 9 thousand units, 3rd year - 12 thousand units, 4th year - 15 thousand units. The price per unit of production for each year will be 660 UAH, 800 UAH, 850 UAH and 970 UAH, respectively. Determine the possible cost of the license, if the royalty rate is 25% of the volume of products sold. The discount rate is 20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 7.5 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 35%. Physical sales of products under this trademark for the year amounted to 1.2 million units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 12 thousand UAH, 2nd year - 20 thousand UAH), 2nd element (2nd year - 50 thousand UAH, 3rd year - 80 thousand UAH, 4th year - 20 thousand UAH), 3rd element (3rd year - 16 thousand UAH, 4th year - 12 thousand UAH, 5th year - 13 thousand UAH). The standard term of validity of a security document from the date of declaration of an idea is 20 years. The discount rate is 25%.

4**.** On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 25%, a rise in the cost of equipment by 12%, a decrease in the unit cost of production by 4%, an increase in the cost of working capital by 6%, and a decrease in the number of key employees by 12%.

Data from existing production:

1) production volume -100 thousand units;

2) the unit price is UAH 500;

3) the value of fixed production assets - UAH 26 million, including fixed equipment - UAH 12.5 million;

4) the cost of working capital - UAH 2.7 million;

5) the average number of employees is 300, including 200 key production personnel.

6) cost of production - UAH 350 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 12

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: Year 1 - 15 thousand units, Year 2 - 26 thousand units, Year 3 - 24 thousand units, Year 4 - 23 thousand units. The price per unit of production for each year will be 1500 UAH, 1800 UAH, 1950 UAH and 2100 UAH, respectively. Determine the possible cost of the license, if the royalty rate is 30% of the volume of products sold. The discount rate is 20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 16 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 29%. The physical volume of sales of products under this trademark for the year is 12 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - UAH 24 thousand, 2nd year - UAH 20 thousand, 3rd year - UAH 40 thousand), 2nd element (2nd year - UAH 70 thousand, 3rd year - UAH 60 thousand), 3rd element (3rd year - UAH 66 thousand, 4th year - UAH 23 thousand, 5th year - UAH 42 thousand). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 18%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 8%, a reduction in the number of key production personnel by 7%, a rise in the cost of equipment by 3%, an increase in the cost of working capital by 5%, and a decrease in the cost per unit of production by 2.5%.

Data from existing production:

1) production volume - 12 thousand units;

2) the unit price is UAH 1800;

3) the value of fixed production assets at the beginning of the year was UAH 10.5 million, including UAH 6 million of fixed equipment.

4) the value of current assets - UAH 6,048 thousand;

5) the average number of employees is 350 people, including 200 key production personnel.

6) cost of production - UAH 1200 per unit.

The production operates on a 4-team schedule. The effective working hours of employees in continuous production and on a 5-day working week are 1928 and 1853 hours, respectively.

Option 13

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 5 thousand units, 2nd year - 6 thousand units, 3rd year - 6.5 thousand units, 4th year - 7 thousand units. The price per unit of production for each year will be 11000 UAH, 12800 UAH, 14750 UAH and 17700 UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is 12% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 35 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 35%. The physical volume of sales of products under this trademark for the year is 2250 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 22 thousand UAH, 2nd year - 25 thousand UAH, 3rd year - 25 thousand UAH), 2nd element (2nd year - 32 thousand UAH, 3rd year - 45 thousand UAH), 3rd element (3rd year - 43 thousand UAH, 4th year - 98 thousand UAH, 5th year - 67 thousand UAH). The standard term of validity of a security document from the date of declaration of an idea is 20 years. The discount rate is 25%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 7.5 %, a reduction in the number of key production personnel by 8 %, a rise in the cost of equipment by 4 %, an increase in the cost of working capital by 5 %, and a decrease in the cost per unit of production by 3 %.

Data from existing production:

1) production volume - 80,000 units;

2) the unit price is UAH 1000;

3) the value of fixed production assets at the beginning of the year was UAH 20 million, including UAH 9 million of fixed equipment;

4) the cost of working capital - UAH 18.2 million;

5) the average number of employees is 210 people, including 150 key production personnel.

6) cost of production - UAH 650 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 14

1. An enterprise plans to sell a license to manufacture a new product at the following production volumes: 1st year - 2.5 thousand units, 2nd year - 2.6 thousand units, 3rd year - 2.4 thousand units, 4th year - 2.3 thousand units. The price per unit of production for each year will be 5700 UAH, 5800 UAH, 5750 UAH and 5700 UAH respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is 18% in years 1 and 2, and 20% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 3.5 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 22%. The physical volume of sales of products under this trademark for the year is 1250 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 22 thousand UAH, 2nd year - 89 thousand UAH, 3rd year - 79 thousand UAH), 2nd element (2nd year - 98 thousand UAH, 3rd year - 77 thousand UAH), 3rd element (3rd year - 87 thousand UAH, 4th year - 89 thousand UAH, 5th year - 668 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 26%.

4. Based on the technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 3%, a reduction in the number of key production personnel by 4%, a rise in the cost of equipment by 5.5%, an increase in the cost of working capital by 1%, and a decrease in the unit cost of production by 2%.

Data from existing production:

1) production volume - 115 thousand units.

2) the unit price is UAH 1400;

3) the cost of fixed production assets is UAH 50 million, including UAH 22.5 million of main equipment;

4) the cost of current assets - UAH 49105 thousand;

5) the average number of employees is 109 people, including 50 key production personnel.

6) cost of production - UAH 1000 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 15

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 25 thousand units, 2nd year - 40 thousand units, 3rd year - 38 thousand units, 4th year - 43 thousand units The price per unit of production for each year will be 470 UAH, 580 UAH, 590 UAH and 630 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The discount rate is 18% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 85 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 35%. The physical volume of sales of products for the year under this trademark is UAH 490.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - UAH 280 thousand, 2nd year - UAH 180 thousand), 2nd element (3rd year - UAH 170 thousand), 3rd element (3rd year - UAH 90 thousand, 4th year - UAH 160 thousand), 4th element (5th year - UAH 90 thousand, 6th year - UAH 80 thousand, 7th year - UAH 60 thousand). The standard term of validity of the security document from the date of declaration of the idea is 25 years. The discount rate is 28%.

4**.** On the basis of technical and economic indicators, make a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 6%, an increase in the cost of equipment by 8%, a decrease in the number of key employees by 15%, an increase in the cost of working capital by 5%, and a decrease in the cost per unit of production by 9%.

Data from existing production:

1) production volume - 200,000 units;

2) the unit price is UAH 600;

3) the value of fixed production assets is UAH 52 million, including fixed equipment - UAH 23.4 million.

4) the cost of working capital - UAH 31.36 million;

5) the average number of employees is 350 people, including 200 key production personnel.

6) cost of production - UAH 400 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 16

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 82.5 thousand units, 2nd year - 82.6 thousand units, 3rd year - 83 thousand units, 4th year - 84 thousand units. The price per unit of production for each year will be 120 UAH, 140 UAH, 175 UAH and 180 UAH, respectively. Determine the possible cost of the license, if the royalty rate is 30% of the volume of products sold. The discount rate is 18% in years 1 and 2, and 24% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 8.7 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 33%. Physical sales of products under this trademark for the year amounted to 1320 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 67 thousand UAH, 2nd year - 87 thousand UAH, 3rd year - 98 thousand UAH), 2nd element (2nd year - 54 thousand UAH, 3rd year - 76 thousand UAH), 3rd element (3rd year - 87 thousand UAH, 4th year - 80 thousand UAH, 5th year - 98 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 28%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 5%, an increase in the number of key production personnel by 5%, a rise in the cost of equipment by 3%, an increase in the cost of working capital by 3%, and a decrease in the unit cost of production by 8.5%.

Data from existing production:

1) production volume - 160 thousand units;

2) the unit price is UAH 550;

3) the value of fixed production assets is UAH 30 million, including fixed equipment - UAH 13.5 million.

4) the cost of working capital - UAH 23.52 million;

5 The average number of employees is 125 people, including 80 key production personnel.

6) cost of production - UAH 350 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 17

1. An entity plans to sell a license to manufacture a new product with the following production volumes: 1st year - 45 thousand units, 2nd year - 46 thousand units, 3rd year - 44 thousand units, 4th year - 43 thousand units. The price per unit of production for each year will be 250 UAH, 280 UAH, 290 UAH and 300 UAH, respectively. Determine the possible cost of the license if the royalty rate is 22% of the volume of sales. The discount rate is 18% in years 1 and 2, and 20% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 97 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 30%. The physical volume of sales of products under this trademark for the year is 450 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 76 thousand UAH, 2nd year - 87 thousand UAH, 3rd year - 89 thousand UAH), 2nd element (2nd year - 45 thousand UAH, 3rd year - 45 thousand UAH), 3rd element (3rd year - 67 thousand UAH, 4th year - 87 thousand UAH, 5th year - 98 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 27%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 4%, a rise in the cost of equipment by 13.5%, an increase in the cost of working capital by 5%, a decrease in the number of key employees by 10%, and a decrease in the unit cost of production by 6.5%.

Data from existing production:

1) production volume - 99 thousand units;

2) the unit price is UAH 900;

3) the value of fixed production assets is UAH 36 million, including fixed equipment - UAH 16.2 million;

4) value of current assets - UAH 24.948 million;

5) the average number of employees is 198 people, including 132 key production personnel.

6) cost of production - UAH 720 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 18

1. An entity plans to sell a license to manufacture a new product with the following production volumes: 1st year - 8.7 thousand units, 2nd year - 8.9 thousand units, 3rd year - 9.2 thousand units, 4th year - 9.6 thousand units. The price per unit of production for each year will be 56 thousand UAH, 57 thousand UAH, 59 thousand UAH and 60 thousand UAH, respectively. Determine the possible cost of the license if the royalty rate is 30% of the volume of products sold. The discount rate is 20% in years 1 and 2, and 22% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 50 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20% and the income tax rate is 18%. The capitalization ratio is 32%. The physical volume of sales of products under this trademark for the year is 65 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 3 structural elements, the costs of which are as follows: 1st element (1st year - 92 thousand UAH, 2nd year - 120 thousand UAH, 3rd year - 180 thousand UAH), 2nd element (2nd year - 160 thousand UAH, 3rd year - 60 thousand UAH), 3rd element (3rd year - 180 thousand UAH, 4th year - 122 thousand UAH, 5th year - 144 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 25%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 15.44%, an increase in the number of key production personnel by 4%, an increase in the cost of working capital by 8%, a rise in the cost of equipment by 14.4%, and a decrease in the unit cost of production by 5.5%.

Data from existing production:

1) production volume - 8 thousand units;

2) the unit price is UAH 790;

3) the value of fixed production assets - UAH 4 million, including fixed equipment - UAH 1.8 million;

4) value of current assets - UAH 1,848 thousand;

5) the average number of employees is 180 people, including 90 key production personnel.

6) cost of production - UAH 600 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 19

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 325 thousand units, 2nd year - 340 thousand units, 3rd year - 338 thousand units, 4th year - 330 thousand units The price per unit of production for each year will be 5250 UAH, 5260 UAH, 5255 UAH and 5245 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The discount rate is 22% in years 1 and 2, and 28% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 8.7 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 26%. Physical sales of products under this trademark for the year amounted to 880 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - UAH 7 thousand, 2nd year - UAH 15 thousand), 2nd element (3rd year - UAH 9 thousand), 3rd element (3rd year - UAH 15 thousand, 4th year - UAH 16 thousand), 4th element (5th year - UAH 98 thousand, 6th year - UAH 79 thousand, 7th year - UAH 78 thousand). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 28%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 4.8%, a rise in the cost of equipment by 6.4%, a decrease in the number of key employees by 15%, a decrease in the cost of working capital by 6%, and a decrease in the cost per unit of production by 7%.

Data from existing production:

1) production volume - 160000 units;

2) the unit price is UAH 362;

3 the value of fixed production assets - UAH 41.6 million, including fixed equipment - UAH 18.72 million;

4) the cost of working capital - UAH 20.07 million;

5 The average number of employees is 350, including 200 key production personnel.

6) cost of production - UAH 320 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 20

1. An entity plans to sell a license to manufacture a new product with the following production volumes: 1st year - 68 thousand units, 2nd year - 69 thousand units, 3rd year - 69 thousand units, 4th year - 68 thousand units. The price per unit of production for each year will be 65 thousand UAH, 66 thousand UAH, 68 thousand UAH and 68 thousand UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The discount rate is 12% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 34 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 30%. The physical volume of sales of products for the year under this trademark is 450 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 200 thousand UAH, 2nd year - 100 thousand UAH), 2nd element (3rd year - 50 thousand UAH), 3rd element (3rd year - 150 thousand UAH, 4th year - 150 thousand UAH), 4th element (5th year - 200 thousand UAH, 6th year - 200 thousand UAH, 7th year - 50 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 25 years. The discount rate is 18%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 12%, an increase in the number of key production personnel by 6%, a rise in the cost of equipment by 3.6%, an increase in the cost of working capital by 2.5%, and a decrease in the unit cost of production by 7.5%.

Data from existing production:

1) production volume - 192 thousand units;

2) the unit price is UAH 540;

3) the value of fixed production assets is UAH 36 million, including fixed equipment - UAH 16.2 million;

4) value of current assets - UAH 33.869 million;

5) the average number of employees is 125 people, including 80 key production personnel.

6) cost of production - UAH 420 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 21

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 12.5 thousand units, 2nd year - 15.6 thousand units, 3rd year - 13.8 thousand units, 4th year - 13.0 thousand units The price per unit of production for each year will be 6600 UAH, 6700 UAH, 6800 UAH and 6900 UAH, respectively. Determine the possible cost of the license if the royalty rate is 20% of the volume of products sold. The discount rate is 13% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 15 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 27%. The physical volume of sales of products under this trademark for the year is 1.2 million units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 80 thousand UAH, 3rd year - 90 thousand UAH), 2nd element (3rd year - 40 thousand UAH), 3rd element (3rd year - 60 thousand UAH, 4th year - 60 thousand UAH), 4th element (5th year - 130 thousand UAH, 6th year - 80 thousand UAH, 7th year - 45 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 28%.

4. On the basis of technical and economic indicators, make a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 5%, a decrease in the cost of equipment by 4%, an increase in the cost of working capital by 7%, a decrease in the unit cost of production by 4.5%, and a decrease in the number of key employees by 12%.

Data from existing production:

1) production volume - 96 thousand units;

2) the unit price is UAH 2,480;

3) value of fixed production assets - UAH 72 million, including fixed equipment - UAH 32.4 million;

4) value of current assets - UAH 70.963 million;

5) the average number of employees is 250 people, including 150 key production personnel.

6) cost of production - UAH 1920 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 22

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 12.1 thousand units, 2nd year - 12.2 thousand units, 3rd year - 12.4 thousand units, 4th year - 12.5 thousand units The price per unit of production for each year will be 5.5 thousand UAH, 5.6 thousand UAH, 5.8 thousand UAH and 5.8 thousand UAH, respectively. Determine the possible cost of the license, if the royalty rate is 25% of the volume of sales. The conversion factor is 17% in the 1st and 2nd years, and 15% in the 3rd and 4th years.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 3.4 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 26%. The physical volume of sales of products for the year under this trademark is 750000 units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 12 thousand UAH, 2nd year - 14 thousand UAH), 2nd element (3rd year - 14 thousand UAH), 3rd element (3rd year - 12 thousand UAH, 4th year - 12 thousand UAH), 4th element (5th year - 48 thousand UAH, 6th year - 87 thousand UAH, 7th year - 10 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 19%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 8%, a reduction in the number of key production personnel by 5%, a rise in the cost of equipment by 10%, a decrease in the cost of working capital by 1%, and a decrease in the cost per unit of production by 5%.

Data from existing production:

1) production volume - 120000 units;

2) the unit price is UAH 1200;

3) value of fixed production assets - UAH 62 million, including fixed equipment - UAH 27.9 million.

4) the cost of working capital - UAH 45.36 million;

5) the average number of employees is 198 people, including 80 key production personnel.

6) cost of production - UAH 900 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 23

1. An entity plans to sell a license to manufacture a new product at the following production volumes: 1st year - 2.5 thousand units, 2nd year - 3.2 thousand units, 3rd year - 4.7 thousand units, 4th year - 5.3 thousand units The price per unit of production by year will be 12850 UAH, 12960 UAH, 13255 UAH and 14245 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The conversion factor is 18% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 7.3 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 30%. Physical sales of products under this trademark for the year amounted to 560 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 53 thousand UAH, 2nd year - 43 thousand UAH), 2nd element (3rd year - 76 thousand UAH), 3rd element (3rd year - 23 thousand UAH, 4th year - 45 thousand UAH), 4th element (5th year - 34 thousand UAH, 6th year - 39 thousand UAH, 7th year - 91 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 28%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 10 %, a reduction in the number of key production personnel by 7.5 %, an increase in the cost of working capital by 5 %, an increase in the cost of equipment by 8.5 %, and a decrease in the unit cost of production by 4 %.

Data from existing production:

1) production volume - 60 thousand units;

2) the unit price is UAH 460;

3) the value of fixed production assets is UAH 8.4 million, including fixed equipment - UAH 3.78 million;

4) the cost of working capital - UAH 8.19 million;

5) the average number of employees is 120 people, including 80 key production personnel.

6) cost of production - UAH 375 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 24

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 35 thousand units, 2nd year - 40 thousand units, 3rd year - 38 thousand units, 4th year - 30 thousand units The price per unit of production for each year will be 220 UAH, 240 UAH, 250 UAH and 270 UAH, respectively. Determine the possible cost of the license if the royalty rate is 23% of the volume of sales. The discount rate is 18% in years 1 and 2, and 15% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 22 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is -20% and the income tax rate is 18%. The capitalization ratio is 28%. The physical volume of sales of products under this trademark for the year is 460 thousand units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 25 thousand UAH, 2nd year - 16 thousand UAH), 2nd element (3rd year - 24 thousand UAH), 3rd element (3rd year - 18 thousand UAH, 4th year - 17 thousand UAH), 4th element (5th year - 34 thousand UAH, 6th year - 67 thousand UAH, 7th year - 98 thousand UAH). The standard term of validity of the security document from the date of declaration of the idea is 20 years. The discount rate is 28%.

4. On the basis of technical and economic indicators, draw a conclusion about the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 4%, a 15% increase in the cost of equipment, a 4% decrease in the cost of working capital, a 4% decrease in the unit cost of production, and a 7% decrease in the number of employees.

Data from existing production:

1) production volume - 110 thousand units;

2) the unit price is UAH 1000;

3) the value of fixed production assets - UAH 40 million, including fixed equipment - UAH 18 million;

4) the cost of working capital is UAH 30.8 million;

5) the average number of employees is 330 people, including 220 key production personnel.

6) cost of production - UAH 800 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

Option 25

1. An enterprise plans to sell a license to manufacture a new product with the following production volumes: 1st year - 56 thousand units, 2nd year - 76 thousand units, 3rd year - 87 thousand units, 4th year - 98 thousand units The price per unit of production for each year will be 60 UAH, 65 UAH, 70 UAH and 87 UAH, respectively. Determine the possible cost of the license if the royalty rate is 25% of the volume of products sold. The discount rate is 18% in years 1 and 2, and 25% in years 3 and 4.

2. Determine the value of a trademarked product, if a marketing study has shown that as of the valuation date, the selling price of 1 unit of product is UAH 3.5 higher than the selling price of a competitor's product. At the same time, each product meets quality standards. The VAT rate is 20%, the income tax rate is 18%. The capitalization ratio is 26%. The physical volume of sales of products under this trademark for the year is 1.4 million units.

3. Determine the price of an object of industrial property that does not have a prototype at the time of sale and consists of 4 structural elements, the costs of which are as follows: 1st element (1st year - 56 thousand UAH, 2nd year - 76 thousand UAH), 2nd element (3rd year - 25 thousand UAH), 3rd element (3rd year - 54 thousand UAH, 4th year - 23 thousand UAH), 4th element (5th year - 47 thousand UAH, 6th year - 87 thousand UAH, 7th year - 43 thousand UAH). The standard term of validity of a security document from the date of declaration of an idea is 20 years. The discount rate is 30%.

4. On the basis of technical and economic indicators, give a conclusion on the feasibility of implementing an engineering solution that provides for: an increase in annual production capacity by 20%, a reduction in the number of key employees by 40%, a rise in the cost of equipment by 5%, an increase in the cost of working capital by 2%, and a decrease in the cost per unit of production by 3%.

Data from existing production:

1) production volume - 5000 units;

2) the unit price is UAH 2,500;

3) the value of fixed production assets is UAH 5 million, including UAH 3 million of fixed equipment.

4) the cost of working capital - UAH 5.6 million;

5) the average number of employees is 220 people, including 120 key production personnel.

6) cost of production - UAH 2000 per unit.

The production operates on a 4-team schedule. The effective working time of employees in continuous production and on a 5-day working week is assumed to be 1928 and 1853 hours, respectively.

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