



## Scoring instructions VSBO PKL

# 2025

period 1

Thursday May 15

7.30 - 10.00 a.m.

**Mathematics**

### **Submitting scores**

Process scores of all candidates in the online AWP program.

The scores must be posted no later than Monday June 2, 2025 at 12.00 midday.

The scoring instructions comprise:

- 1 Assessment standards
- 2 General rules
- 3 Subject-specific rules
- 4 Additions to the scoring instructions
- 5 Appraisal model

## 1 Assessment Standards

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The candidate's work is assessed with due observance of articles 30, 31 and 32 of the Federal Examination Decree vwo-havo-vsbo of 23-06-2008, PB 2008 no 54.

The following passages from the articles of the Federal decree mentioned above are of essence:

- 1 The school principal submits the completed exam assignments including a copy of the exam questions, the scoring instructions and the official report of the exam to the examiner. The examiner evaluates the work and submits it to the principal along with his/her evaluation. The examiner applies the assessment standards and the appraisal model decreed by ETE (the Examination Bureau).
- 2 The principal immediately submits the deposited exams, including a copy of the exam questions, the scoring instructions and the official report of the exam to the external examiner.
- 3 The external examiner promptly evaluates the work, applying the appraisal model and the assessment standards decreed by ETE (Examination Bureau).
- 4 The examiner and the external examiner confer and jointly determine the score totals for the national exam.
- 5 If they cannot reach a consensus, the score totals are determined by way of a mathematical average of the scores proposed by each of them, rounded off upwards if so required.

## 2 General rules

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As far as evaluation of the exam goes, the following stipulations apply:

- 1 The examiner declares on a list, the candidate names and/or numbers, the scores awarded to each candidate for each question and the total score acquired by each candidate.
- 2 The examiner and the external examiner award scores to the answer to a question in accordance with the appraisal model. Scores are represented by the numbers 0, 1, 2, ..., n, whereby n represents the maximum score attainable for a question. Additional scores, not being a whole integer, or a score being less than 0, are not legitimate.
- 3 Scores are awarded in compliance with the following rules
  - 3.1 If a question is answered correctly in full, the maximum score attainable is awarded;
  - 3.2 If an answer to the question is partially correct, a portion of the score attainable is awarded, in compliance with the appraisal model;

- 3.3 If the answer to an open-end question does not appear on the appraisal model, while said answer may be deemed correct or partially correct by virtue of demonstrable arguments with regard to subject matter content, scores must be awarded on the analogy or in the spirit of the appraisal model;
- 3.4 If solely one example, reason, elaboration, quote or answer of a different nature is required, then only (and exclusively) the first-offered answer is evaluated;
- 3.5 If more than one example, reason, elaboration, quote or answer of a different nature is required, then only (and exclusively) the first-offered answers are evaluated, up to a maximum of the number of answers asked for;
- 3.6 If a required statement or explanation or derivation or calculation is missing or wrong in an answer, then a score of 0 is awarded, unless the appraisal model indicates otherwise;
- 3.7 If various options separated by the symbol / appear in the appraisal model, then said options are valid as different phrasings of the same answer or part of the answer;
- 3.8 If a portion of the answer is bracketed in the appraisal model, then said portion is not absolutely required in the candidate's answer.
- 4 The correct answer to a multiple-choice question is the capital letter that matches the correct choice. For a correct answer to a multiple-choice question, the number of points listed in the appraisal model is awarded. For each other answer, no points are awarded. If more than one answer is given, no points are awarded either.
- 5 An error in the elaboration of a question may be charged but once, unless said error simplifies the question significantly and/or unless the appraisal model states otherwise.
- 6 A same-like error in the response to different questions must be charged consistently for each individual case, unless the appraisal model states otherwise.
- 7 If the examiner or the external examiner is of the opinion that there is an error or discrepancy in an exam or in the appraisal model of said exam, then he evaluates the work as if the exam and its appraisal model were correct. He should, however, report the error or discrepancy to ETE. It is not allowed to deviate independently from the appraisal model. Such errors, if any, will be taken into account when the final marking of the exam is determined by ETE.
- 8 Points are awarded on the basis of answers given by the candidate to each question. No points shall be awarded in advance.
- 9 The grade for the national exam is arrived at in the following fashion: The first and second corrector determine the score of each candidate. Said score is conveyed to the principal. The principal determines the grade of the national exam on the basis of standards with regard to converting score to grade. Said grade may be read from conversion tables that are made available by ETE after the final marking of the exam has been established.

### 3 Subject-specific rules

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A maximum of 68 score points can be scored for this central written exam VSBO PKL mathematics first period 2025. The exam consists of 28 questions.

The following subject-specific rules have been established for this exam:

1. For each calculation error, 1 score point is deducted to the maximum of the number of score points that can be given for that part of that particular question.
2. If the candidate has made a notation error when answering a question and if it is evident that this has no further influence on the final answer, no score point will be deducted for this.
3. Per question, no more than 1 score point can be deducted for giving an incorrect unit or not mentioning the corresponding unit. In the entire exam, no more than 2 score points may be deducted in this respect.
4. The total number of score points that may be deducted in the entire exam for rounding off incorrectly, is no more than 2. That is to say, a maximum of 1 point if the candidate rounds up incorrectly once or several times and also a maximum of 1 point if the candidate rounds down incorrectly once or several times.
5. If there is no instruction with regard to the manner in which an answer must be rounded off, then all approaches to the answer that ensue from a correct calculation and that are also plausible, are outright correct. In the entire exam the following applies: unless the appraisal model explicitly awards points for rounding off, the instruction: "round off to ... decimals" serves only as an indication to the candidate how accurately he may and is never intended for examining the skill of *rounding off numbers*.
6. If, from the answer given, it appears that the candidate has simplified the formulation of the problem, it is not allowed to award the maximum score to the answer given.

## 4 Additions to the scoring instructions

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There are two reasons for supplementing the scoring instructions: clarification and an error.

### *Clarification*

The scoring instructions are drawn up before the exam has been administered. Only after the exam it will become apparent what answers candidates have given.

Questions and reactions that arrive at ETE after the exam can make it evident that the scoring instructions do not do justice to answers given by candidates. In that case, a supplement to the scoring instructions can still provide clarity.

### *An error*

If ETE determines that a national exam contains an error, ETE may decide to add a supplement to the scoring instructions.

A supplement to the scoring instructions is announced by means of a mail from ETE. A supplement to the scoring instructions will be sent to the secretaries of the examination committee as soon as possible.

If no supplement to the scoring instructions is sent after an imperfection has been detected, ETE will take the deficiency into account when determining the final pass mark.

## 5 Scoring instructions

Question	Answer	Scores
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*The correct answer to a multiple-choice question is awarded 1 point.*

**1 maximum score 2**

A calculation or operation that shows that the increase is the number 3.2.

1

Division of 3.2 by 4 = 0.8 (kg of loss per week);

1

*Instead of 3.2, also regard the number -3.2 as correct.*

*In all cases, regard the numbers - 0.8 and 0.8 as correct.*

**2 A**

**3 C**

**4 maximum score 6**

To each graph applies:

Points plotted correctly. (1 point)

Curve through the plotted points. (1 point)

**5 C**

**6 B**

**7 maximum score 3**

number of seconds	0	30	60	90	120	150
temperature in °C	25	43	61	79	97	115

*All answers correct, 3 points.*

*One incorrect answer, 2 points and if one intermediate answer is incorrect but all other intermediates result from an addition of 18, award 2 points.*

*Two incorrect answers, 1 point and if two intermediate answers are incorrect all other intermediates result from an addition of 18, award 1 point.*

*More than two incorrect answers: 0 points*

**8 A**

Question	Answer	Scores
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**9 maximum score 4**

The change in temperature is **periodic**.

measurement number	1	2	3	4	5	6
temperature in °C	160	185	163	188	166	191
Increase/difference		25	-22	25	-22	25

Finding the increase/difference 25.

1

Finding the increase/difference -22.

1

Finding the repetition of the increments 25 and -22 in the rest of the table, i.e. completing the entire table correctly.

1

A correct conclusion based on the completed table.

1

**10 maximum score 3**

Plotting the three points (2,62), (5,155), (½,15,50) in the right places in the graph.

2

*For each error, deduct 1 point.*

*The explanation given must imply that:*

because all three points are on the graph it means Charlie is obedient to the government.

1

**11 maximum score 2**

statement	true	false
Before the year begins, Charlie is already receiving orders for fish in Banda Ariba.	x	
During the year, less and less fish is bought in Banda Ariba as well as in Banda Abou.		x
The Banda Abou graph clearly shows the period in which Good Friday falls.	x	

*Three rows correct, 2 points*

*Two or one row correct, 1 point.*

**12 B**

**13 maximum score 3**

$20 - 0.75 = 27.25$  (liters).

1

$27.25 \div 15 = 1.816...$  (liters of batter per cake)

1

$1.816 \times 3 \div 8 = 0.68...$  ( $\approx 0.7$  liters of oil per cake).

1

*No deduction of points for rounding off incorrectly.*

*2nd part subject-specific rule no. 5 applies.*

Question	Answer	Scores
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**14 maximum score 5**

Area of square =  $l \times b = 20 \times 20 = 400 \text{ cm}^2$ . 1

Diameter of circle = 20 cm, therefore radius = 10 cm. 1

Area of circle =  $3.14 \times 10 \times 10 = 314 \text{ cm}^2$  1

Total area =  $400 + 314 = 714 \text{ cm}^2$  1

Volume of cake =  $714 \times 20 = 14280 \text{ cm}^3$  1

**15 maximum score 3**

The rule of thumb for a man's height is 1.80 m. 1

Measurement on the picture:

Height Davy is  $3.5 \pm 0.1 \text{ cm}$  and height of the ceiling is  $6.0 \pm 0.1 \text{ cm}$ . 1

*(If these measurements do not seem to match the measurements on the printed version of this exam, then assess based on the correct measurements in the exam with the associated follow-up calculation).*

Calculation:  $6.0 \div 3.5 \times 180 = 308.57 \text{ cm} / 3.09 \text{ m}$ . 1

Margin of error:  $2.95 \text{ m} \leq \text{final answer} \leq 3.23 \text{ m}$

The following is an example calculation with ratio table:

	height in the picture		height in reality
Davy	3.5 cm	$\div 3.5$ → 1	$\times 180$ → 180 cm
ceiling	6.0 cm	$\div 3$ → 1.71..	$\times 180$ → 308.57.. cm



Question	Answer	Scores
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**16 maximum score 3**

An example of proper instructions is:

1. Turn your body -90°.
2. Take 2 or 3 steps forward.
3. Turn your body 90°.
4. Take 2 or 3 steps forward.
5. Turn your body -90°.
6. Take 1 or 2 steps forward.

*The instructions are completely correct so that Davy gets to the gift, 3 points.  
For each incorrect instruction, deduct 1 point.*

**17 maximum score 1**

Margin of error:  $3 \text{ m} \leq \text{distance Emmely to Davy} \leq 8 \text{ m}$ .

**18 maximum score 2**

Convert feet to meters or vice versa.

1

Conclusion agrees with the answer of the conversion.

1

Example of calculation and conclusion:

$14 \times 30.48 = 426.72 \text{ cm} = 4.2672 \text{ m}$ .

Conclusion: 4.2672 m is longer than 4 m (so, long enough).

**19 maximum score 4**

Converting the width of a T-bar and the height of the front  
into equal units such as cm or inch.

2

Dividing to calculate the number of slats needed.

1

Rounding off according to the situation.

1

Example of calculation and conclusion:

$12 \text{ inches} = 30.48 \text{ cm}$ , therefore  $6 \text{ inches} = 30.48 \div 2 = 15.24 \text{ cm}$ . (1 point)

$1.5 \text{ m} = 150 \text{ cm}$ . (1 point)

$150 \div 15.24 = 9.84$  (1 point)

So, 10 slats. (1 point)

**20 maximum score 1**

850 psi is **6000** kPa.

Question	Answer	Scores
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**21 maximum score 2**

Measuring length b in the photo:  $b = 5.5 \text{ cm} \pm 0.1 \text{ cm}$ .

1

*(If this measurement does not match the measurement on the printed version of this exam, then assess based on the correct measurement in the exam with the associated follow-up calculation).*

Calculate the width of the Keel in reality:  $5.5 \times 45 = 247.5 \text{ cm} / (2.48 \text{ m})$

**22 maximum score 2**

diver's name	diving depth (in m)	distance from the surface of the water (in m)
Carlos	20 m	– 20 m
Dino	16 m	– 16 m
Aaron	15 m	– 15 m
Beto	13.5 m	– 13.5 m

*In reverse order is also correct. For each incorrect answer, deduct 1 point. However, should the correct sequence be present in any of the three columns, award 1 point irrespective of the number of incorrect answers.*

**23 maximum score 3**

In picture I, one can indicate **8** angles of  $90^\circ$ .

1

Angle 1, 8 and 9 combined add up to **180** degrees.

1

Angle 1 up to and including angle 12 combined add up to **720** degrees.

1

**24 maximum score 3**

The angles: AEB, CEB, ACD, ACB, ABD and CBD

*The sequence of the letters is not an assessment aspect.  $AEB = EAB = BEA$ .*

*All six mentioned: 3 points.*

*Five or four other mentioned, 2 points.*

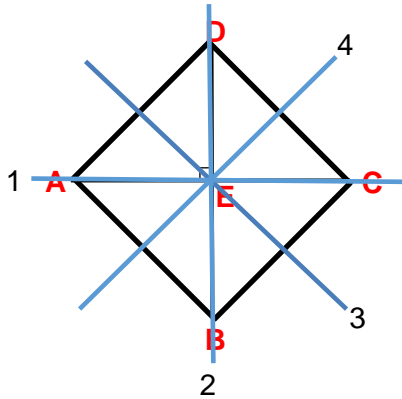
*Two or one other mentioned, 1 point.*

Question	Answer	Scores
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25 maximum score 1

The number of isosceles triangles is: 8

26 maximum score 2



Axes 1 and 2, 1 point  
Axes 3 and 4, 1 point.

27 maximum score 4

$AE = \frac{1}{2} \times AC = 20$  cm.  $DE = 20$  cm.

1

Correct application and writing of Pythagoras:

2

For each incorrect answer, deduct 1 point.

For example, in tabular format:

side	side <sup>2</sup>
$AE = 20$	400
$DE = 20$	400 +
$AD = ?$	800
$AD = \sqrt{(800)} = 28.284\dots$	

For example, algebraic:

$$AD^2 + DE^2 = AE^2$$

$$20^2 + 20^2 = AE^2$$

$$AD^2 = 800$$

$$AD = \sqrt{(800)} = 28.284\dots$$

Circumference window =  $4 \times AD = 4 \times 28.284\dots = 113.137 (\approx 113.14$  cm). 1

No point deduction for incorrect rounding off. 2nd part subject-specific rule 5.

Question	Answer	Scores
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**28 maximum score 3**

The base of the triangle = 40 and the height of the triangle = 20. 1

Area of the window:  $\frac{1}{2} \times 40 \times 20 \times 2 = 800 \text{ cm}^2$ . 1

$800 \text{ cm}^2 = 0.08 \text{ m}^2$ . 1

Or

Area =  $(28.284\dots)^2 = 800 \text{ cm}^2$ .

*Use of 28,284, 1 point.*

*Squaring 1 point.*

*Correct answer, 1 point.*