EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
38	1 hour	4

Name: ..... Class: .....

Date: .....

MARK ____ / 38

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 Under a reflection in the y-axis, the point $(3\ ;\ 5)$ maps to ... (1)

A) $(-3\ ;\ 5)$ **B)** $(5\ ;\ 3)$
C) $(3\ ;\ -5)$ **D)** $(-3\ ;\ -5)$

1.2 Under a reflection in the x-axis, the point $(4\ ;\ -2)$ maps to ... (1)

A) $(-4\ ;\ -2)$ **B)** $(-2\ ;\ 4)$
C) $(-4\ ;\ 2)$ **D)** $(4\ ;\ 2)$

1.3 A rotation of $180°$ about the origin maps $(x\ ;\ y)$ to ... (1)

A) $(-x\ ;\ y)$ **B)** $(x\ ;\ -y)$
C) $(y\ ;\ x)$ **D)** $(-x\ ;\ -y)$

1.4 The point $(5\ ;\ 3)$ is translated 2 units LEFT and 4 units UP. Its image is ... (1)

A) $(7\ ;\ 7)$ **B)** $(3\ ;\ 7)$
C) $(7\ ;\ -1)$ **D)** $(3\ ;\ -1)$

1.5 Which transformation does NOT change the size of a shape? (1)

A) enlargement with factor 3 **B)** enlargement with factor 0,5
C) enlargement with factor 2 **D)** translation

1.6 A rectangle 4 cm by 3 cm is enlarged by a factor of 3. Its new PERIMETER is ... (1)

A) 14 cm **B)** 21 cm
C) 42 cm **D)** 126 cm

1.7 For that same enlargement, the new AREA is ... (1)

A) $36\ \text{cm}^2$ **B)** $108\ \text{cm}^2$

C) $324\ \text{cm}^2$ **D)** $12\ \text{cm}^2$

1.8 A shape and its image under a TRANSLATION are ... (1)

A) congruent **B)** different shapes

C) similar but not congruent **D)** always larger

1.9 The point $(-4\ ;\ -7)$ is the image of a point reflected in the y-axis. The ORIGINAL point was ... (1)

A) $(4\ ;\ 7)$ **B)** $(-4\ ;\ 7)$

C) $(4\ ;\ -7)$ **D)** $(-7\ ;\ -4)$

1.10 Reflecting a point in the line $y = x$ maps $(2\ ;\ -6)$ to ... (1)

A) $(-6\ ;\ 2)$ **B)** $(6\ ;\ -2)$

C) $(2\ ;\ 6)$ **D)** $(-2\ ;\ 6)$

ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2 **[9 MARKS]**

In the diagram below, shape A has been mapped onto its image A′.



reflection in the dashed line — the image stays congruent to A

2.1 Describe fully the single transformation that maps A onto A′. **(3)**

2.2 State, with a reason, whether A and A′ are congruent or similar. **(3)**

2.3 Shape A′ is now reflected in the SAME dashed line. Describe the image that results, and explain why. **(3)**

QUESTION 3 [10 MARKS]

Answer the following questions about transformations on the Cartesian plane.

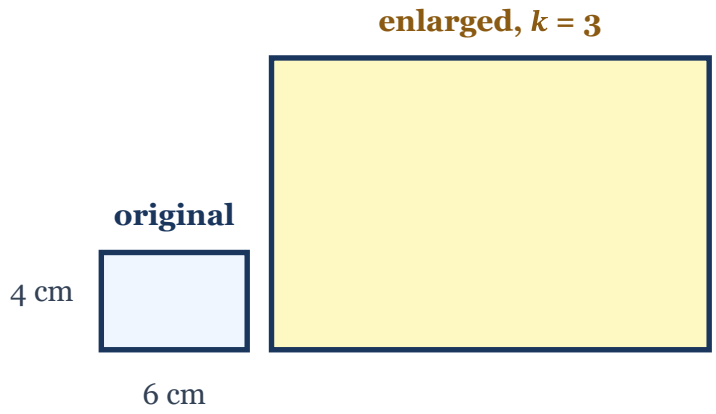
3.1 Write down the coordinates of the image of the point $(3\ ;\ 5)$ after a reflection in the x-axis, and state the general rule. **(3)**

3.2 The point $(3\ ;\ 5)$ is now translated 4 units right and 6 units down. Determine the coordinates of its image. **(3)**

3.3 A point is reflected in the y-axis and its image is $(-2\ ;\ 7)$. Determine the coordinates of the ORIGINAL point, and explain your reasoning. **(4)**

QUESTION 4 [9 MARKS]

A rectangle has a perimeter of 20 cm and an area of 24 cm^2. It is enlarged by a scale factor of 3.



4.1 Calculate the perimeter of the enlarged rectangle. **(3)**

4.2 Calculate the area of the enlarged rectangle. **(3)**

4.3 A learner says the new area must be $24 \times 3 = 72$ cm^2. Explain the learner's mistake. **(3)**

TOTAL: 38 marks

This question paper consists of 4 questions.

© Danemathics — free to print and share for classroom use.