EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
35	55 minutes	3

Name: _____ Class: _____

Date: _____

MARK ____ / 35

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 the rule $(x\,;\,y) \rightarrow (-x\,;\,y)$, the point $(3\,;\,-5)$ maps to ... (1)

A) $(-3\,;\,5)$ **B)** $(-5\,;\,3)$

C) $(3\,;\,5)$ **D)** $(-3\,;\,-5)$

1.2 A rotation of $180°$ about the origin has the rule ... (1)

A) $(x\,;\,y) \rightarrow (-x\,;\,y)$ **B)** $(x\,;\,y) \rightarrow (x\,;\,-y)$

C) $(x\,;\,y) \rightarrow (-x\,;\,-y)$ **D)** $(x\,;\,y) \rightarrow (y\,;\,x)$

1.3 Reflecting in the line $y = x$ maps $(4\,;\,-1)$ to ... (1)

A) $(-1\,;\,4)$ **B)** $(-4\,;\,1)$

C) $(4\,;\,1)$ **D)** $(1\,;\,-4)$

1.4 Which transformation changes the SIZE of a figure? (1)

A) enlargement **B)** translation

C) rotation **D)** reflection

1.5 A figure and its image under a reflection are ... (1)

A) different shapes **B)** similar only

C) congruent **D)** always larger

1.6 A rectangle 5 cm by 3 cm is enlarged by a factor of 4. Its new AREA is ... (1)

A) 60 cm^2 **B)** 15 cm^2

C) 960 cm^2 **D)** 240 cm^2

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

A) 16 cm **B)** 64 cm

C) 256 cm **D)** 32 cm

1.8 The point $(5\ ;\ 3)$ is translated 3 units RIGHT and 2 units DOWN. Its image is ... (1)

A) $(8\ ;\ 5)$ **B)** $(2\ ;\ 1)$

C) $(2\ ;\ 5)$ **D)** $(8\ ;\ 1)$

1.9 An enlargement with a scale factor BETWEEN 0 and 1 produces an image that is ... (1)

A) larger **B)** smaller

C) the same size **D)** upside down

1.10 $(-2\ ;\ 6)$ is the image of a point rotated $180°$ about the origin. The ORIGINAL point was ... (1)

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

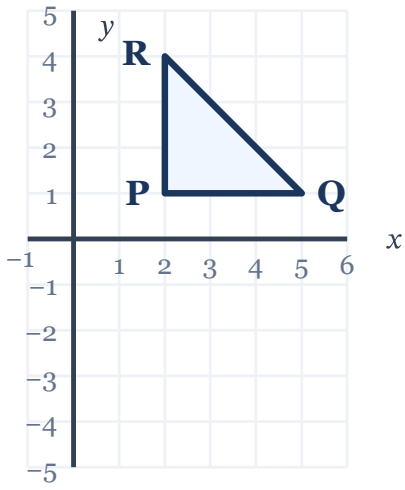
C) $(2\ ;\ -6)$ **D)** $(-2\ ;\ -6)$

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]

$\triangle$PQR has vertices P$(2\ ;\ 1)$, Q$(5\ ;\ 1)$ and R$(2\ ;\ 4)$.



2.1 Reflect $\triangle$PQR in the x-axis and write down the image coordinates. **(3)**

2.2 The point $(4\ ;\ -7)$ is the image of a point reflected in the y-axis. Find the original point, and hence write down the image of that ORIGINAL point when it is reflected in the x-axis instead. **(3)**

2.3 Which of reflection, translation, rotation and enlargement do NOT produce a congruent image? Give a reason. **(3)**

QUESTION 3 [16 MARKS]

Answer the following about transformations on the Cartesian plane.

3.1 Write down the coordinate rule for a rotation of $180°$ about the origin, and explain why applying it TWICE returns a point to where it started. **(3)**

3.2 Hence write down the image of $(3\ ;\ -6)$ under that rotation, and its image under a reflection in the line $y = x$. **(3)**

3.3 The point B$(-4\ ;\ 2)$ is rotated $90°$ CLOCKWISE about the origin to give B′. Write down the coordinates of B′, and state in which quadrant it lies. **(3)**

3.4 The point $(5\ ;\ 3)$ is translated 2 units left and 4 units up. Write down the image, and describe the translation that would move the image back to $(5\ ;\ 3)$. **(3)**

3.5 A rectangle 4 cm by 3 cm is enlarged by a factor of 3. Determine its new perimeter and new area. **(4)**

TOTAL: 35 marks

This question paper consists of 3 questions.

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