∑ DANEMATHICS
FREE CAPS MATHS RESOURCES

GRADE 8 · GEOMETRY OF STRAIGHT LINES

Angle Relationships: Straight, Intersecting & Perpendicular Lines

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
37	1 hour	4

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

Date: .....

MARK ____ / 37

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 Angles on a straight line add up to ... (1)

A) 360° **B)** 270°
C) 90° **D)** 180°

1.2 Angles round a point add up to ... (1)

A) 360° **B)** 540°
C) 90° **D)** 180°

1.3 Two lines intersect. One angle is 65°. The angle VERTICALLY OPPOSITE it is ... (1)

A) 295° **B)** 65°
C) 115° **D)** 25°

1.4 Two angles on a straight line are x and $3x$. The value of x is ... (1)

A) 45° **B)** 30°
C) 60° **D)** 90°

1.5 Two angles that add up to 90° are called ... (1)

A) adjacent **B)** complementary
C) supplementary **D)** vertically opposite

1.6 Perpendicular lines meet at ... (1)

A) $90°$ **B)** $45°$

C) $180°$ **D)** $360°$

1.7 An angle of $130°$ is called ... (1)

A) reflex **B)** acute

C) obtuse **D)** right

1.8 The SUPPLEMENT of $47°$ is ... (1)

A) $47°$ **B)** $313°$

C) $43°$ **D)** $133°$

1.9 Three angles round a point are $90°$, $130°$ and x. Then x is ... (1)

A) $220°$ **B)** $140°$

C) $360°$ **D)** $40°$

1.10 Which statement about vertically opposite angles is TRUE? (1)

A) they add up to $180°$ **B)** they are always acute

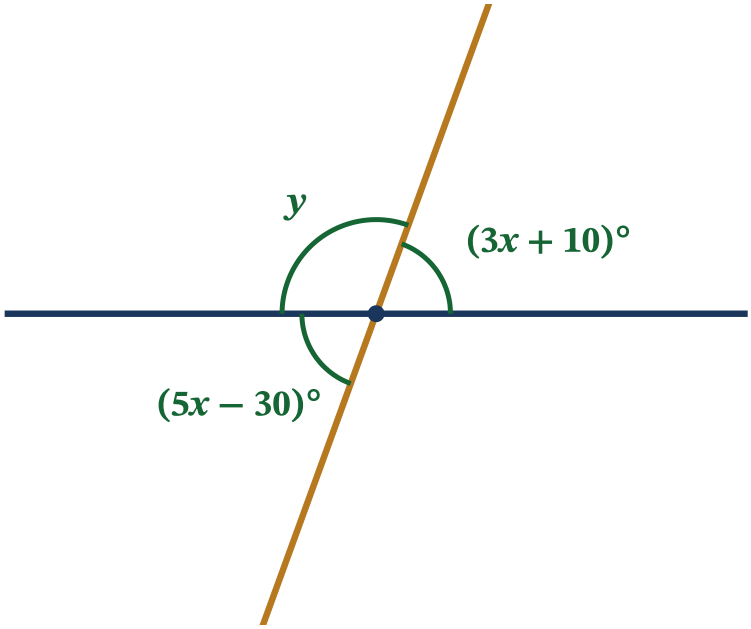
C) they are equal **D)** they add up to $90°$

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 [10 MARKS]

In the diagram below, two straight lines intersect at O. *The diagram is not drawn to scale.*



2.1 Calculate the value of x. **(3)**

STATEMENT	REASON

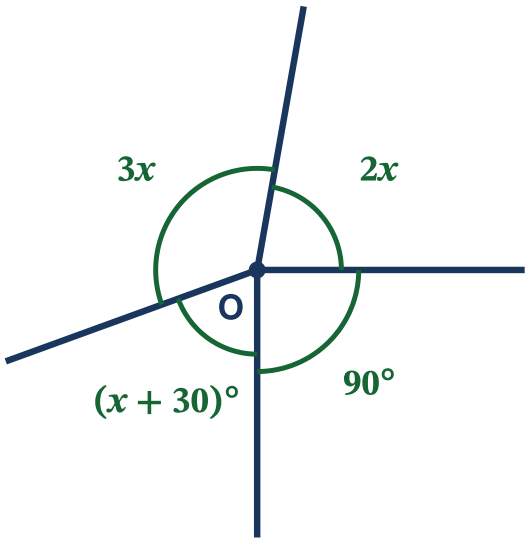
2.2 Hence determine the size of the angle marked $(3x + 10)°$. **(3)**

2.3 Hence determine, with a reason, the size of y. **(4)**

STATEMENT	REASON

QUESTION 3 [9 MARKS]

Four rays meet at the point O in the diagram below. *The diagram is not drawn to scale.*



3.1 Write down an equation in x and solve it. **(4)**

STATEMENT	REASON

3.2 Hence write down the size of each of the three unknown angles. **(3)**

3.3 Show that your four angles are correct. **(2)**

QUESTION 4 [8 MARKS]

Answer the following. Show all your working.

4.1 Two angles, $(2y - 10)°$ and $(y + 40)°$, are complementary. Calculate the value of y and the size of each angle. **(4)**

STATEMENT	REASON

4.2 An angle is three times the size of its supplement. Calculate the size of the angle. **(4)**

STATEMENT	REASON

TOTAL: 37 marks

This question paper consists of 4 questions.

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