

WA7MMGTW4

Two-dimensional space and structures

Core + Challenge

Angle Notation and Angle Relationships

I can name points, lines and angles with correct notation, classify angles and use angles at a point and on a straight line.

Name: _____ Date: _____ Score: _____ / 58

Key idea

Notation: line AB goes on forever both ways; segment AB stops at A and B; ray AB starts at A and passes through B. angle ABC has its **vertex** at B (the middle letter).

Types: acute $< 90^\circ$ · right $= 90^\circ$ · obtuse $90^\circ - 180^\circ$ · straight $= 180^\circ$ · reflex $180^\circ - 360^\circ$ · revolution $= 360^\circ$.

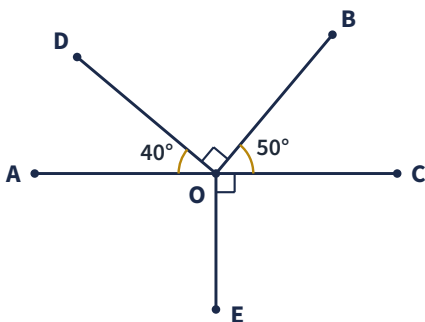
Relationships: angles on a straight line add to **180°** (supplementary) · around a point add to **360°** · complementary angles add to **90°** .

Vertically opposite angles (made by two crossing lines) are **equal**.

A Fluency *practise the skill*

/ 16 marks

Q1–10 and Q16 use the diagram. 1 mark each.



- | | |
|------------------------------|--|
| 1. Vertex of angle BOC _____ | 9. Size of reflex angle BOC _____ |
| 2. Type of angle BOC _____ | 10. Type of a 310° angle _____ |
| 3. Type of angle BOD _____ | 11. Complement of 35° _____ |
| 4. Size of angle AOB _____ | 12. Supplement of 35° _____ |
| 5. Type of angle AOB _____ | 13. Angles at a point: 120° , 150° , x _____ |

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6. Size of angle AOD _____

14. Type of a 360° angle _____

7. Type of angle AOC _____

15. Endpoints of a line segment _____

8. Another right angle _____

16. Name the angle at O between rays OB and OC _____

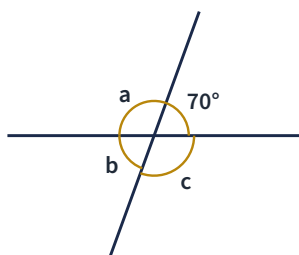
B

Core *apply the skill to problems*

/ 22 marks

1 Two straight lines cross. Find a, b and c. Give a reason for each.

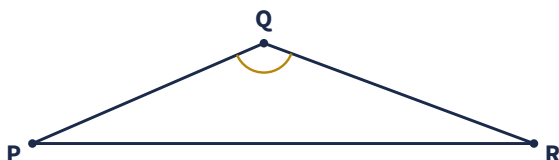
[3 marks]



Answer: _____

2 Name the marked angle in triangle PQR using three letters, and classify it.

[2 marks]



Answer: _____

3 Find x.

[2 marks]

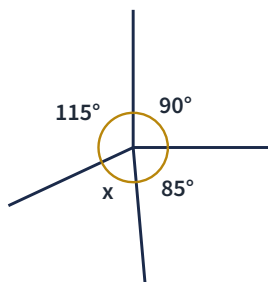


Answer: _____

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4 Find x .

[2 marks]



Answer: _____

5 angle ABD and angle DBC are complementary. angle ABD = 28° . Find angle DBC.

[2 marks]

.....

Answer: _____

6 What is the angle between the hands of a clock at 4:00? Classify it.

[2 marks]

.....

.....

Answer: _____

7 Explain the difference between line AB, segment AB and ray AB. Draw each one.

[3 marks]

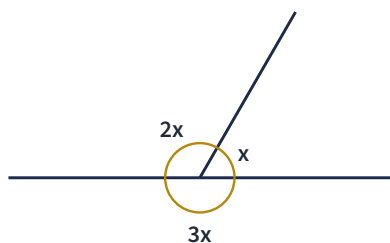
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8 Find x .

[2 marks]

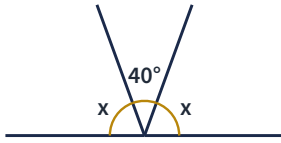


Answer: _____

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9 Find x .

[2 marks]



Answer: _____

10 What is the angle between the clock hands at 7:00? Give both the obtuse angle and the reflex angle.

[2 marks]

.....

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Answer: _____

C

Reasoning *explain, justify and check*

/ 9 marks

1 Use Core Q1 to explain why vertically opposite angles are always equal.

[3 marks]

.....

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2 Can two obtuse angles be supplementary? Explain.

[2 marks]

.....

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3 Why do we name the angles at O in the fluency diagram with three letters instead of just 'angle O'?

[2 marks]

.....

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4 Explain why the angles around a point add to 360° .

[2 marks]

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D**Challenge** *multi-step and problem-solving*

/ 11 marks

- 1 Two angles are supplementary. One is 4 times the size of the other. Find both angles. [3 marks]

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Answer: _____

- 2 Find the angle between the hands of a clock at 3:30. (Hint: the hour hand is halfway between 3 and 4.) [3 marks]

.....

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Answer: _____

- 3 Three straight lines cross at one point, making six angles. Two adjacent angles are 50° and 60° . Find all six angles. [3 marks]

.....

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Answer: _____

- 4 The supplement of an angle is three times its complement. Find the angle. [2 marks]

.....

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Answer: _____

How did I go?

Fluency ____ / 16 Core ____ / 22 Reasoning ____ / 9 Challenge ____ / 11 **Total ____ / 58**

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