GRADE 8 · GEOMETRY OF STRAIGHT LINES

Angle Relationships: Straight, Intersecting & Perpendicular Lines

MEMORANDUM

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

Date: .....

MARK ____ / 19

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

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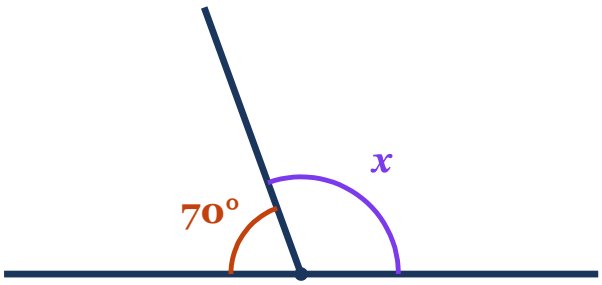
1 Two angles on a straight line are $(3x + 5)°$ and $(x + 15)°$. Determine the value of x, and hence the size of each angle. **(4)**

> Angles on a straight line add up to $180°$ *(1)*
> $4x + 20 = 180$ *(1)*
> $\boldsymbol{x = 40}$ *(1)*
> The angles are **125°** and **55°** *(1)* ✓✓✓✓ **(4)**

2 Two vertically opposite angles are $(4x + 10)°$ and $(2x + 50)°$. Determine the value of x, and hence the size of each angle. **(4)**

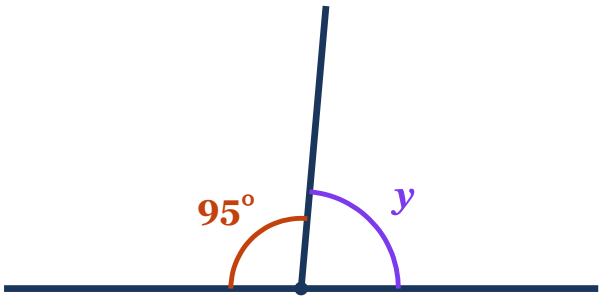
> Vertically opposite angles are equal *(1)*
> $2x = 40$ *(1)*
> $\boldsymbol{x = 20}$ *(1)*
> The angles are **90°** and **90°** *(1)* ✓✓✓✓ **(4)**

3 Angles of $70°$ and x lie on a straight line. Find x. **(1)**



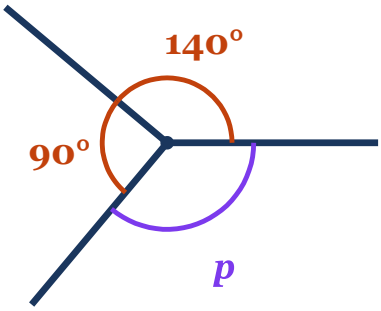
> $180° - 70° = \boldsymbol{110°}$ ✓ **(1)**

4 Angles of $95°$ and y lie on a straight line. Find y. **(1)**



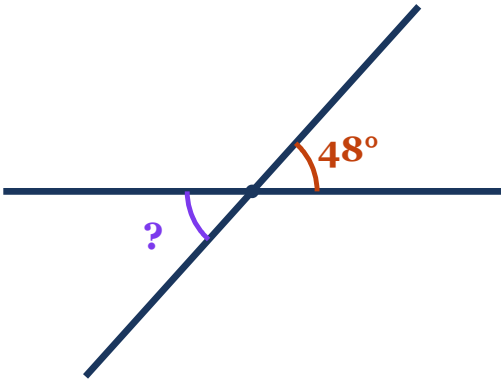
$180° - 95° = \mathbf{85°}$ ✓ (1)

5 Angles of $140°$, $90°$ and p meet at a point. Find p. **(2)**



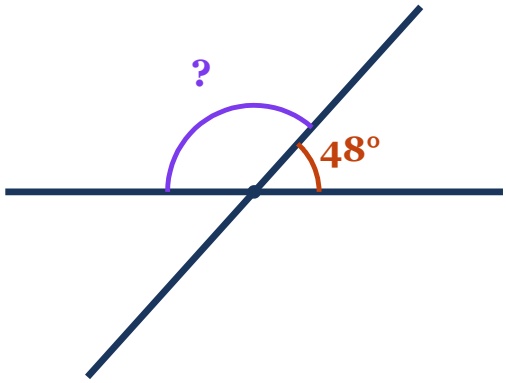
$360° - 230° = \mathbf{130°}$ ✓✓ (2)

6 Two lines cross forming an angle of $48°$. What is its vertically opposite angle? **(1)**



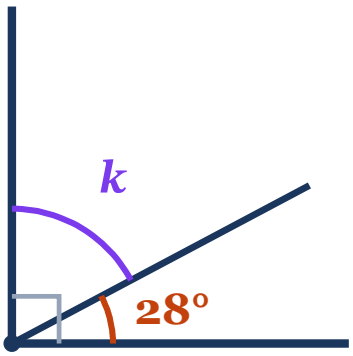
48° (vertically opposite angles are equal) ✓ (1)

7 Two lines cross forming an angle of $48°$. What is the neighbouring angle? (2)



$180° - 48° = \mathbf{132°}$ ✓✓ (2)

8 A right angle is split into $28°$ and k. Find k. (1)

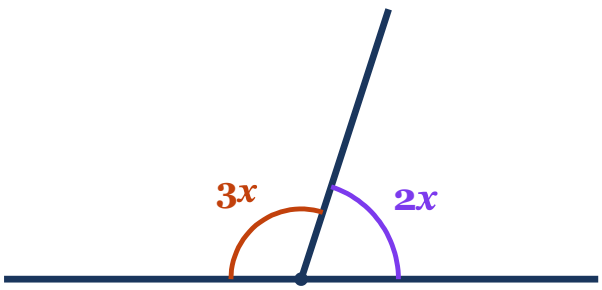


$90° - 28° = \mathbf{62°}$ ✓ (1)

9 What does AB ⊥ CD mean? (1)

AB is **perpendicular** to CD — they meet at $90°$. ✓ (1)

10 Angles $3x$ and $2x$ lie on a straight line. Find x. (2)



$3x + 2x = 180 \rightarrow 5x = 180 \rightarrow \mathbf{x = 36°}$ ✓✓ (2)

TOTAL: 19 marks

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