Angles on Parallel Lines: The Complete Exam Guide

MEMORANDUM

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

Date: .....

MARK ____ / 37

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 co-interior angles are $(2x)°$ and $(x + 30)°$. Determine the value of x, and hence the size of each angle. **(4)**

Co-interior angles on parallel lines add up to $180°$ *(1)*
$3x + 30 = 180$ *(1)*
$\boldsymbol{x = 50}$ *(1)*
The angles are **100°** and **80°** *(1)* ✓✓✓✓ (4)

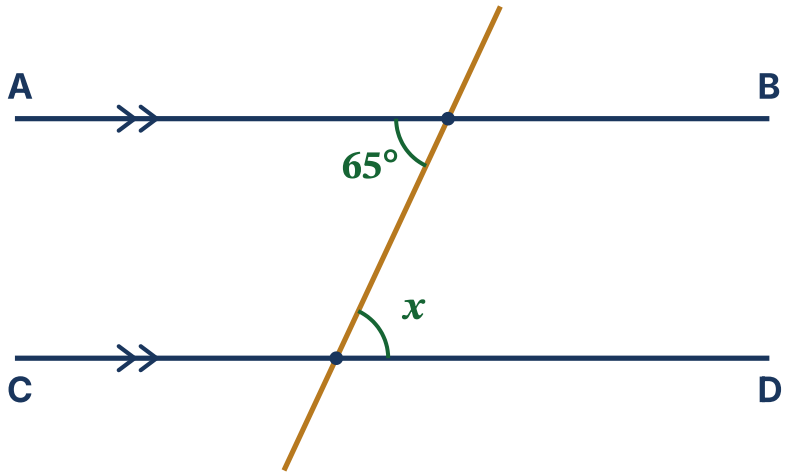
2 Two corresponding angles are $(5x - 18)°$ and $(2x + 30)°$. Determine the value of x, and hence the size of each angle. **(4)**

Corresponding angles on parallel lines are equal *(1)*
$3x = 48$ *(1)*
$\boldsymbol{x = 16}$ *(1)*
The angles are **62°** and **62°** *(1)* ✓✓✓✓ (4)

3 Two co-interior angles are $(3x - 20)°$ and $(x + 40)°$. Determine the value of x, and hence the size of each angle. **(4)**

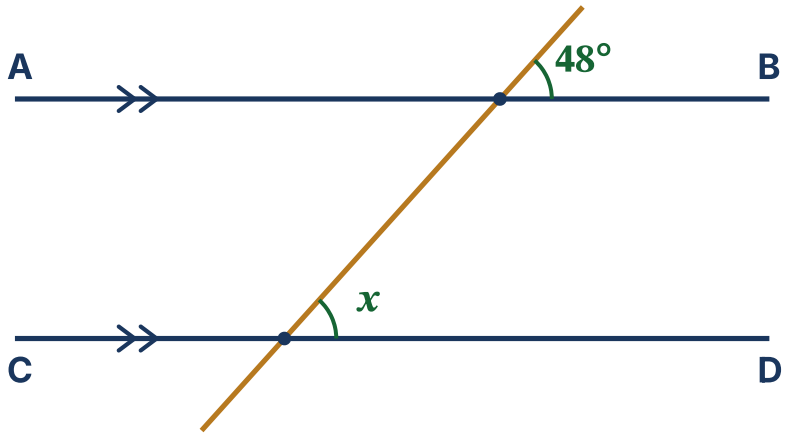
Co-interior angles on parallel lines add up to $180°$ *(1)*
$4x + 20 = 180$ *(1)*
$\boldsymbol{x = 40}$ *(1)*
The angles are **100°** and **80°** *(1)* ✓✓✓✓ (4)

4 In the diagram below, AB ∥ CD. Determine the size of x, giving a reason. (2)



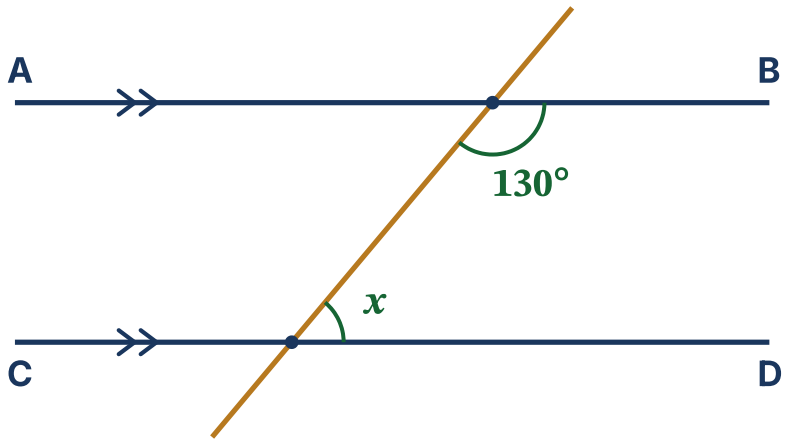
$x = 65°$ (alt ∠s; AB ∥ CD) ✓✓ (2)

5 In the diagram below, AB ∥ CD. Determine the size of x. Give a reason for your statement. (2)



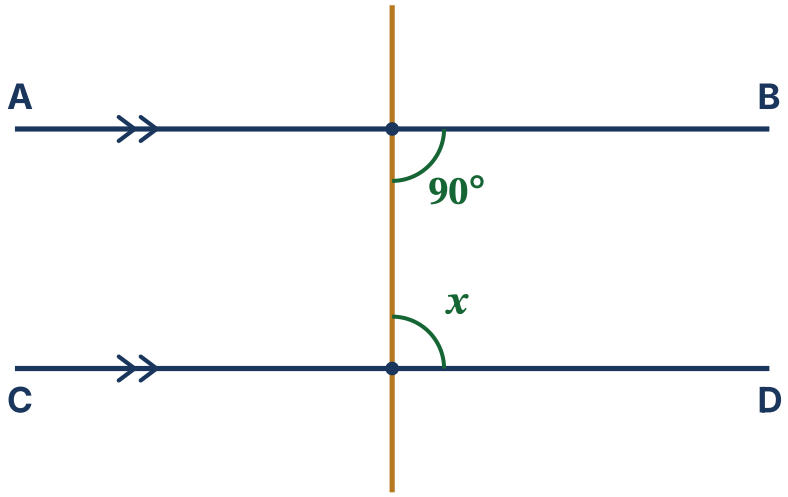
$x = 48°$ (corresp ∠s; AB ∥ CD) ✓✓ (2)

6 In the diagram below, AB ∥ CD. Write down the size of x and the reason for your answer. (2)



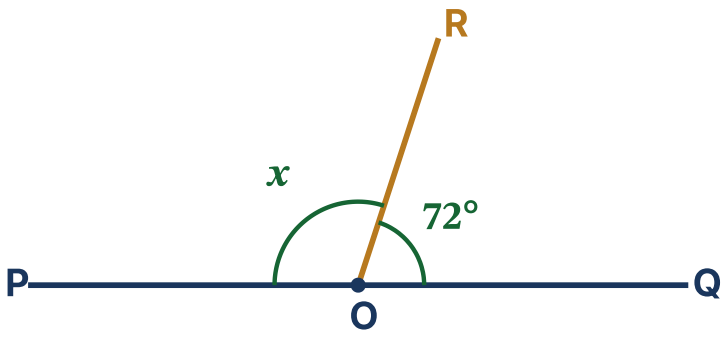
$x = 180° - 130° = \mathbf{50°}$ (co-int ∠s; AB ∥ CD) ✓✓ (2)

7 In the diagram below, AB ∥ CD. Determine, with a reason, the size of x. (2)



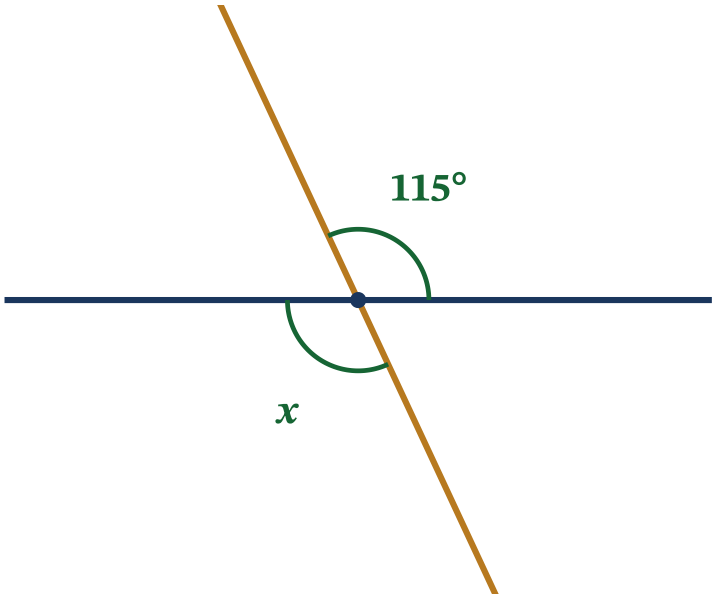
$x = 180° - 90° = \mathbf{90°}$ (co-int ∠s; AB ∥ CD) ✓✓ (2)

8 In the diagram below, POQ is a straight line. Determine the size of x. (2)



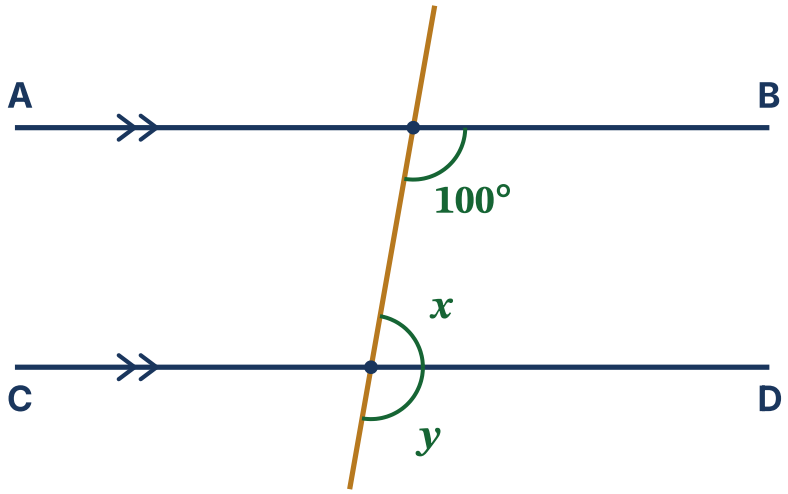
$x = 180° - 72° = \mathbf{108°}$ (∠s on a str line) ✓✓ (2)

9 Two straight lines intersect as shown in the diagram below. Determine the size of x. (2)



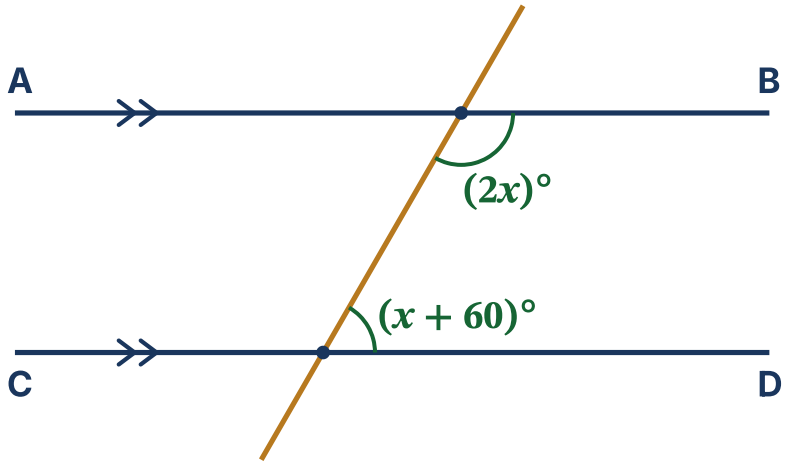
$x = \mathbf{115°}$ (vert opp ∠s) ✓✓ (2)

10 In the diagram below, AB ∥ CD. Determine the sizes of y and then x, giving reasons. (4)



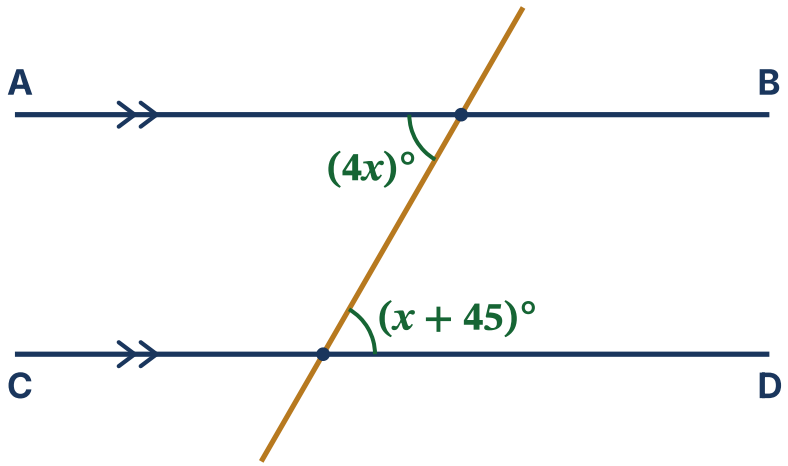
$y = \mathbf{100°}$ (corresp ∠s; AB ∥ CD), then $x = 180° - 100° = \mathbf{80°}$ (co-int ∠s; AB ∥ CD) ✓✓✓✓ (4)

11 In the diagram below, AB ∥ CD. Calculate the value of x. (3)



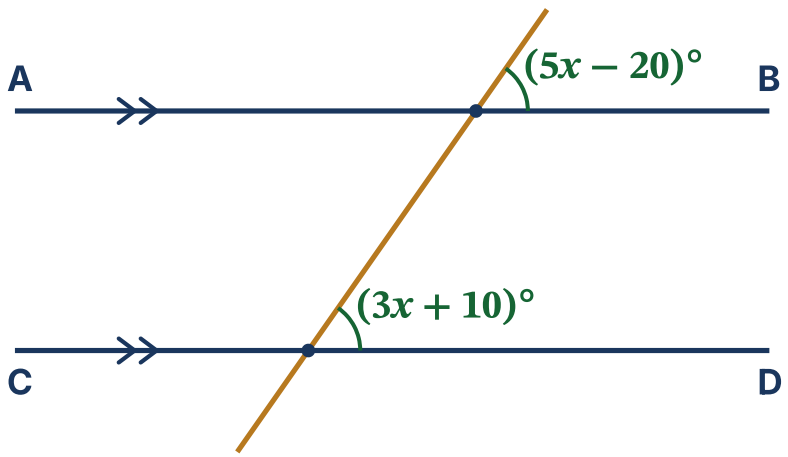
$3x + 60 = 180 \rightarrow 3x = 120 \rightarrow x = \mathbf{40}$ ✓✓✓ (3)

12 In the diagram below, AB ∥ CD. Solve for x. (3)



$4x = x + 45 \rightarrow 3x = 45 \rightarrow x = \mathbf{15}$ ✓✓✓ (3)

13 In the diagram below, AB ∥ CD. Determine the value of x. (3)



$5x - 20 = 3x + 10 \rightarrow 2x = 30 \rightarrow x = \mathbf{15}$ ✓✓✓ (3)

TOTAL: 37 marks

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