

GCSE Maths: Parallel lines (Foundation): worksheet

GCSE Maths - Angles, Polygons and Symmetry - Foundation - Lesson 17.4

Name: _____

Date: _____

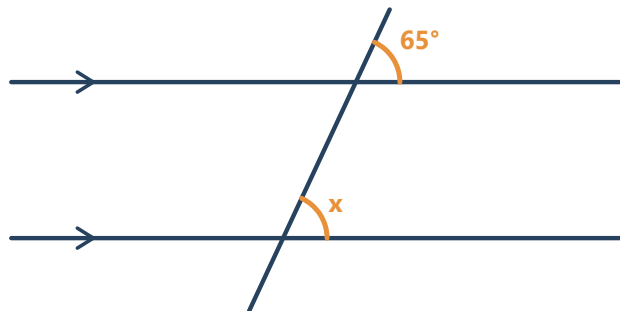
Score: _____

23 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch17-angles-polygons-symmetry/foundation/parallel-lines/

Exercise 17D Parallel lines: alternate, corresponding and co-interior angles

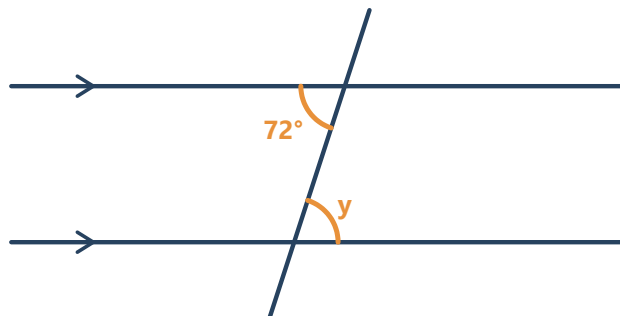
Non-calculator

- 1 In the diagram the two horizontal lines are parallel. Work out the value of x . Give reasons for your answer.



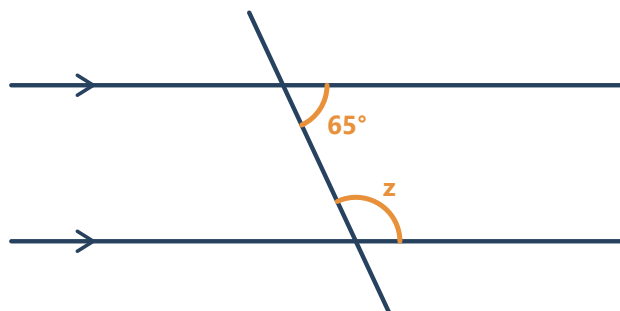
Answer:

- 2 In the diagram the two horizontal lines are parallel. Work out the value of y . Give reasons for your answer.



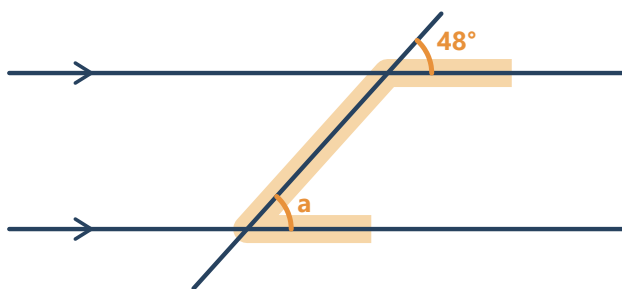
Answer:

- 3 In the diagram the two horizontal lines are parallel. Work out the value of z . Give reasons for your answer.



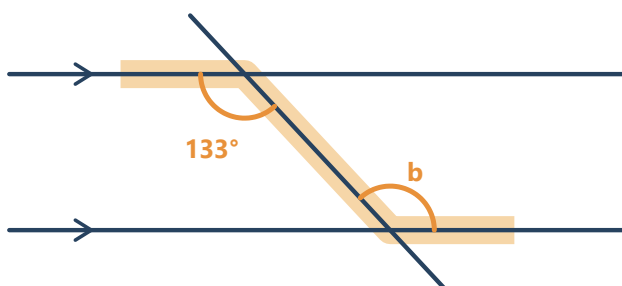
Answer:

- 4 In the diagram the two horizontal lines are parallel. Work out the value of a . Give reasons for your answer.



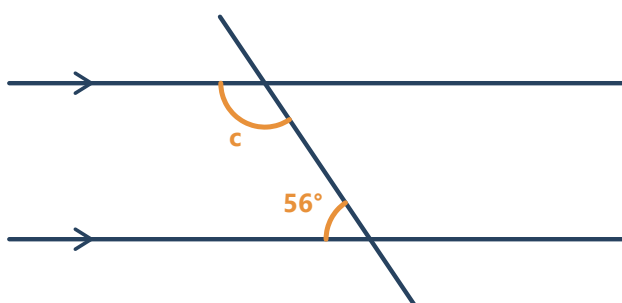
Answer:

- 5 In the diagram the two horizontal lines are parallel. Work out the value of b .



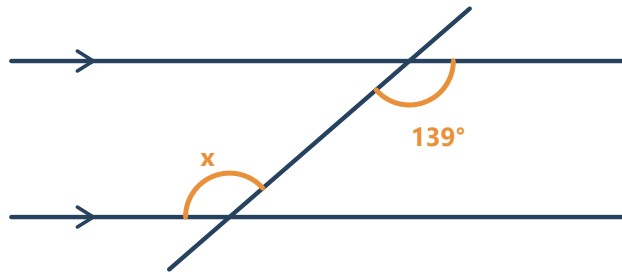
Answer:

- 6 In the diagram the two horizontal lines are parallel. Work out the value of c . Give reasons for your answer.



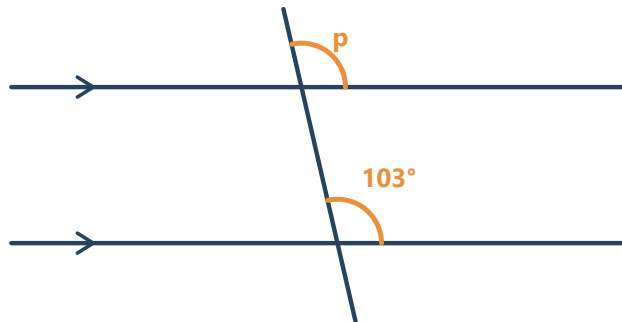
Answer:

- 7 In the diagram the two horizontal lines are parallel. Work out the value of x . Give reasons for your answer.



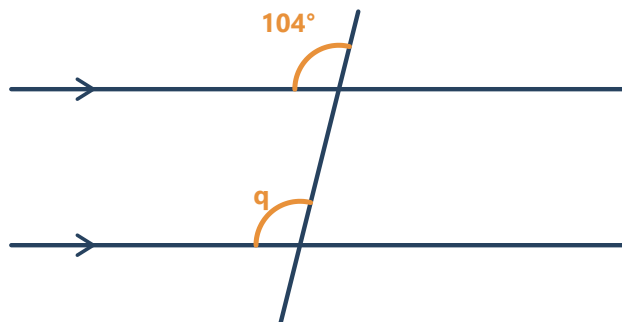
Answer:

- 8** In the diagram the two horizontal lines are parallel. Work out the value of p . Give reasons for your answer.



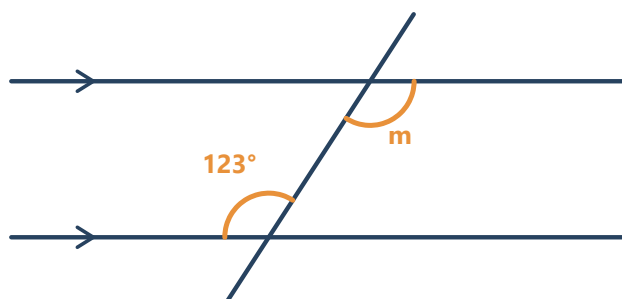
Answer:

- 9** In the diagram the two horizontal lines are parallel. Work out the value of q . Give reasons for your answer.



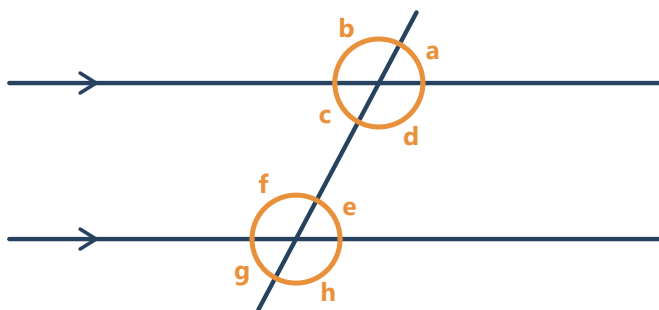
Answer:

- 10** In the diagram the two horizontal lines are parallel. Work out the value of m .



Answer:

- 11** The diagram shows two parallel lines and a transversal, with the angles labelled a to h .



- (a)** angle a : corresponding

Answer:

- (b)** angle c : alternate

Answer:

- (c)** angle d : co-interior

Answer:

- (d)** angle d : corresponding

Answer:

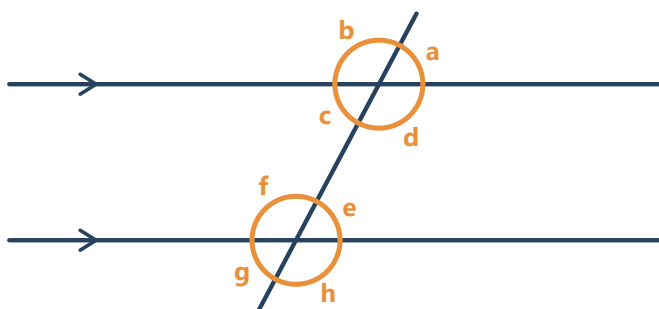
- (e)** angle d : alternate

Answer:

- (f)** angle c : co-interior

Answer:

- 12** In the diagram of the eight angles (a to h), angle $a = 62^\circ$. Work out the size of every other angle and give a reason for each.



- (a)** angle b

Answer:

- (b)** angle c

Answer:

(c) angle d

Answer: _____

(d) angle e

Answer: _____

(e) angle f

Answer: _____

(f) angle g

Answer: _____

(g) angle h

Answer: _____

13 Write **true** or **false** and give a reason.

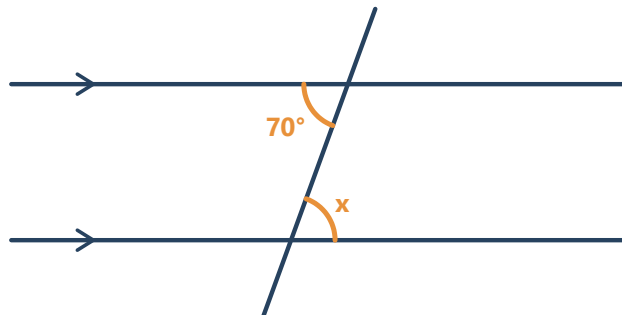
(a) Co-interior angles are always equal.

Answer: _____

(b) Alternate angles are equal when the lines are not parallel.

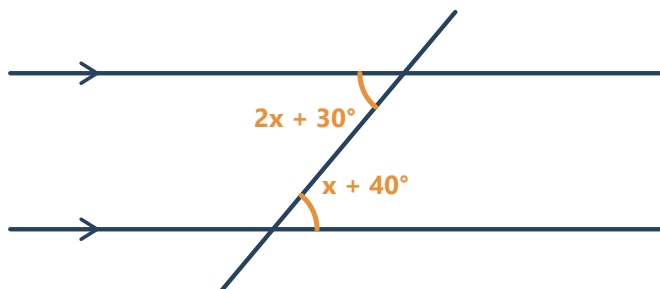
Answer: _____

14 Ali says that angle x is 110° because co-interior angles add up to 180° . Explain his mistake and give the correct value.



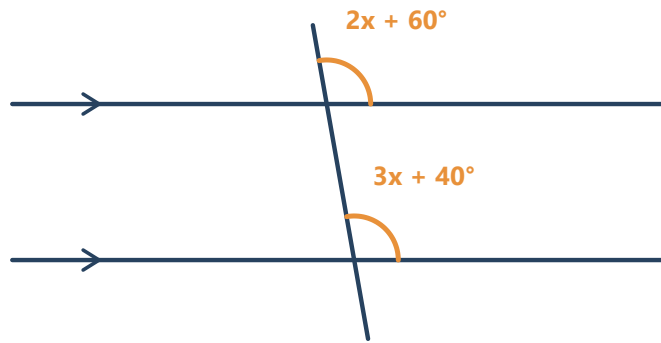
Answer: _____

15 The lines are parallel. The two marked angles are $(2x + 30)^\circ$ and $(x + 40)^\circ$. Work out the value of x .



Answer: _____

16 The lines are parallel. The two marked angles are $(2x + 60)^\circ$ and $(3x + 40)^\circ$. Work out the value of x . What type of angles are they?



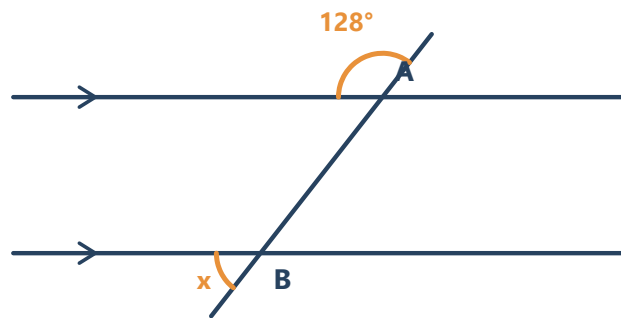
Answer:

- 17** Two parallel lines are crossed by a transversal. One of the angles is 90° . What can you say about all the other seven angles? Explain.

Answer:

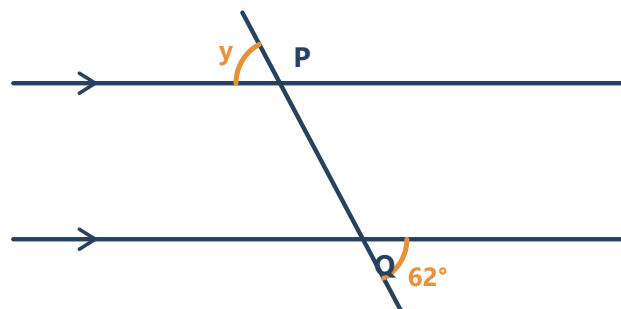
Exercise 17E Parallel lines: multi-step angle problems and reasons Non-calculator

- 1** In the diagram the two horizontal lines are parallel. Work out the value of x . Give reasons for your answer.



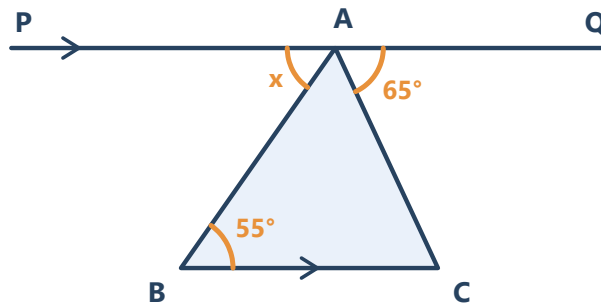
Answer:

- 2** In the diagram AB and CD are parallel (the arrows show this). Work out the size of angle y . Give reasons.



Answer:

- 3** In the diagram, PAQ is parallel to BC. Work out (a) the size of angle x (angle PAB), (b) the size of angle BAC. Give reasons.



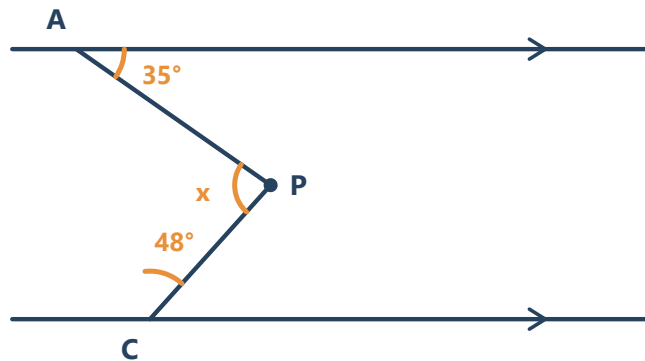
(a) Angle PAB

Answer:

(b) Angle BAC

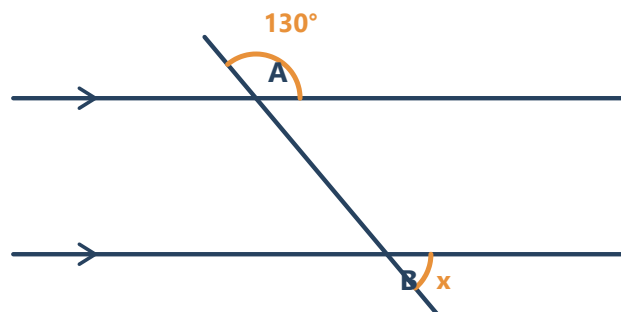
Answer:

- 4 In the diagram, the horizontal lines through A and C are parallel. Work out the size of angle x (angle APC). Give reasons.



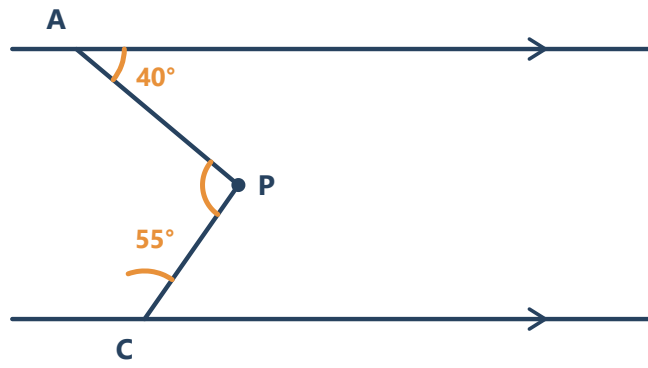
Answer:

- 5 In the diagram the horizontal lines are parallel. Work out the size of angle x . Give reasons.



Answer:

- 6 The diagram shows two parallel lines and a point P between them. Write down the size of angle APC and explain how you know.



Answer: