

GCSE Maths: Quadrilaterals (Higher): worksheet

GCSE Maths - Angles, Polygons and Symmetry - Higher - Lesson 17.5

Name: _____

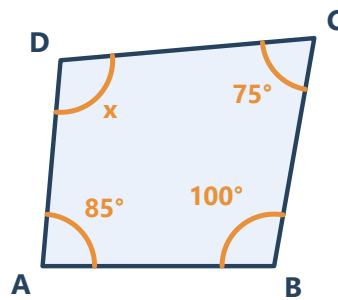
Date: _____

Score: _____

18 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch17-angles-polygons-symmetry/higher/quadrilaterals/

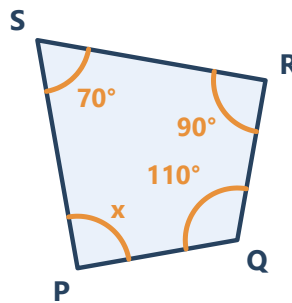
Exercise 17F Quadrilaterals Non-calculator

- 1 The diagram shows a quadrilateral. Work out the size of angle x . Give a reason for your answer.



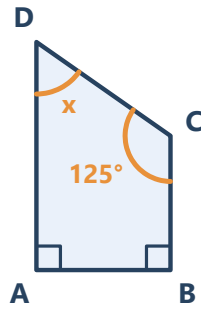
Answer: _____

- 2 The diagram shows a quadrilateral. Work out the size of angle x . Give a reason for your answer.



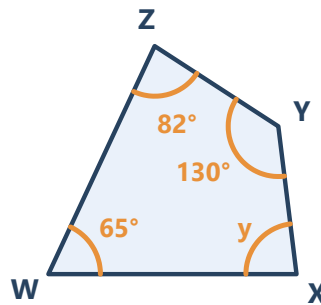
Answer: _____

- 3 The diagram shows a quadrilateral. Work out the size of angle x . Give a reason for your answer.



Answer:

- 4 The diagram shows a quadrilateral. Work out the size of angle y .



Answer:

- 5 Write the name of the quadrilateral that matches each description. Give the most specific name.

(a) Four equal sides and four right angles.

Answer:

(b) Two pairs of equal sides, and opposite sides parallel, and no right angles.

Answer:

(c) Four equal sides, with no right angles.

Answer:

(d) Exactly one pair of parallel sides.

Answer:

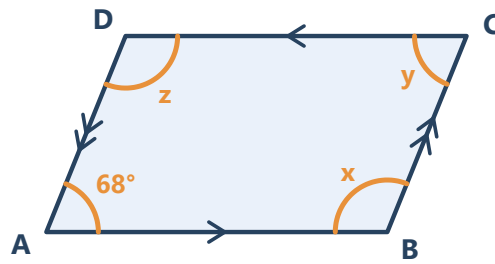
(e) Two pairs of equal sides next to each other, with one line of symmetry.

Answer:

(f) Four right angles and opposite sides equal, but sides not all equal.

Answer:

- 6 ABCD is a parallelogram. Angle A = 68° . Work out the size of each angle marked with a letter. Give a reason for each answer.



(a) Work out angle x (angle B).

Answer:

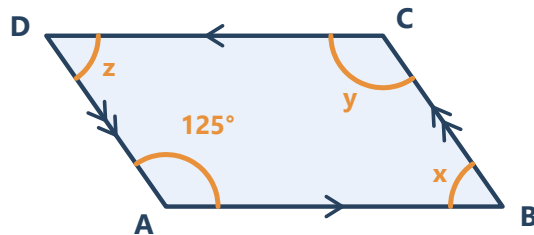
(b) Work out angle y (angle C).

Answer:

(c) Work out angle z (angle D).

Answer:

- 7 ABCD is a parallelogram. Angle A = 125° . Work out the size of each angle marked with a letter. Give a reason for each answer.



(a) Work out angle x (angle B).

Answer:

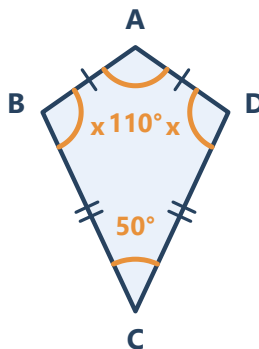
(b) Work out angle y (angle C).

Answer:

(c) Work out angle z (angle D).

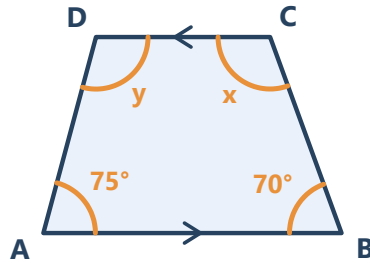
Answer:

- 8 ABCD is a kite. Angle BAD = 110° and angle BCD = 50° . Work out angle ABC. Give reasons.



Answer:

- 9 ABCD is a trapezium with AB parallel to DC. Work out the size of (a) angle x (b) angle y. Give reasons.



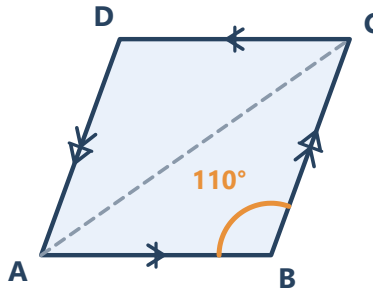
- (a) Angle x (angle BCD)

Answer:

- (b) Angle y (angle ADC)

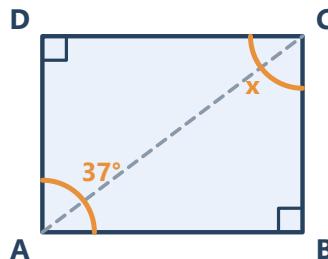
Answer:

- 10 ABCD is a rhombus. Angle ABC = 110°. The diagonal AC is drawn. Work out the size of angle BAC. Give reasons.



Answer:

- 11 ABCD is a rectangle and AC is a diagonal. Angle CAB = 37°. Work out the size of angle ACB. Give reasons.



Answer:

- 12 Write down the number of lines of symmetry of each quadrilateral.

- (a) A square: how many lines of symmetry?

Answer:

(b) A rectangle: how many lines of symmetry?

Answer:

(c) A parallelogram: how many lines of symmetry?

Answer:

(d) A rhombus: how many lines of symmetry?

Answer:

(e) A kite: how many lines of symmetry?

Answer:

(f) An isosceles trapezium: how many lines of symmetry?

Answer:

13 Write **true** or **false**. Give a reason for each answer.

(a) Every rectangle is a square.

Answer:

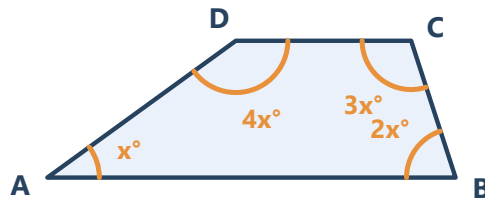
(b) A rhombus is a parallelogram.

Answer:

(c) A trapezium has two pairs of parallel sides.

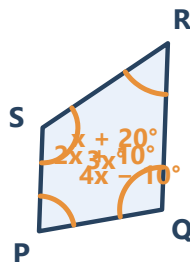
Answer:

14 The diagram shows a quadrilateral. Work out the value of x .



Answer:

15 The diagram shows a quadrilateral. Work out the size of the angle marked $4x - 10^\circ$.

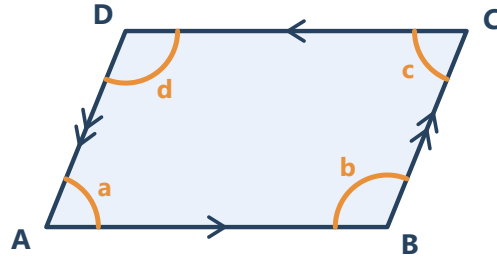


Answer:

16 Three angles of a quadrilateral are 90° , 90° and 90° . Write down the fourth angle. What can you say about the quadrilateral? Give a reason.

Answer:

- 17** Show that the opposite angles of a parallelogram are equal.



Answer:

- 18** The angles of a quadrilateral are x , $(x + 30)^\circ$, $2x$ and $(3x - 20)^\circ$. Show that the quadrilateral has an angle of 100° .

Answer:
