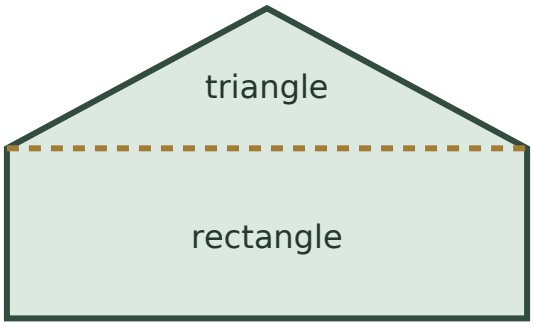
Shapes, angles and symmetry - topic test

12 questions | 19 marks | 30 minutes

Begin with familiar ideas, then explain and apply your understanding. Show your working.

Equivalent correct methods earn the corresponding marks.

1. The supplied house outline is split by a dashed line. Name its two parts. [1 mark]



The upper part has three sides and the lower part has four right angles.

Answer: A triangle and a rectangle.

2. Name the solids in a model with a cone nose and a cylinder body. [1 mark]

Use solid names because the pieces have depth.

Answer: A cone and a cylinder.

3. Name an angle smaller than a right angle. [1 mark]

It is less than a quarter turn.

Answer: Acute.

4. Name an angle larger than a right angle but smaller than a straight angle. [1 mark]

Its turn lies between a quarter and a half turn.

Answer: Obtuse.

5. Name a half-turn angle. [1 mark]

A half turn makes a straight line.

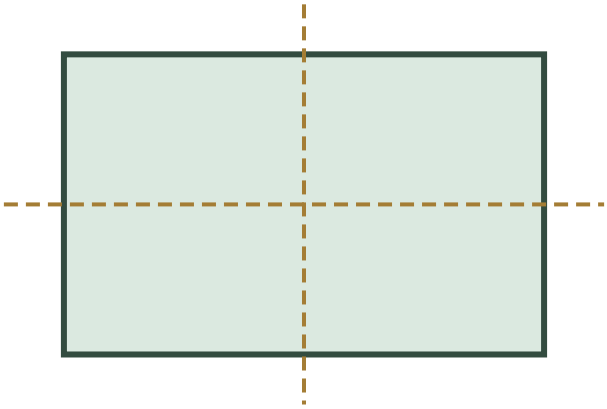
Answer: Straight.

6. Name an angle larger than a half turn but smaller than a full turn. [1 mark]

Reflex describes the larger opening.

Answer: Reflex.

7. Draw a non-square rectangle and show its two reflection lines. [2 marks]



A non-square rectangle does not have diagonal mirror lines.

Answer: A vertical and a horizontal line through the centre.

8. Give the smallest matching turn for each plain shape. [2 marks]

(a) A square. [1 mark]

After a quarter turn the square matches its original outline.

Answer: A quarter turn.

(b) A non-square rectangle. [1 mark]

A quarter turn swaps long and short directions; a half turn matches.

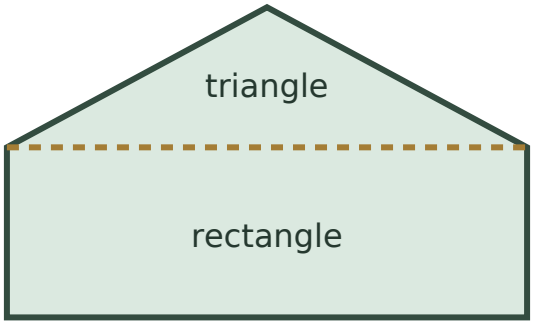
Answer: A half turn.

9. A six-column grid is reflected across its centre line. Which columns match columns 1 and 3? [2 marks]

Use the pairs 1/6, 2/5 and 3/4.

Answer: Column 6 matches 1; column 4 matches 3.

10. Draw a composite shape made from one triangle and one rectangle. Show the join. [2 marks]



The component shapes touch without a gap. Other valid joins are possible.

Answer: One valid answer is a house-shaped outline with the triangle above the rectangle.

11. A square outline has a blue dot near only one corner. Does the decorated design match after a quarter turn? Explain. [2 marks]

The whole decorated design must match, not only its outline.

Answer: No. The dot moves to another corner where there was no dot.

12. Make a rectangular design with half-turn symmetry using two coloured dots. Explain where they go. [3 marks]

A half turn swaps each dot into the position of the other.

Answer: Place matching dots near opposite corners at matching distances from the edges.