Year 9 Angles and Pythagoras – Challenge

HappyKids.fit

Year 9 · Maths · Angles, Polygons and Pythagoras' Theorem · Level 3 Challenge · 8 questions

Name _____ **Date** _____

A. Think like a mathematician

1. A triangle has sides 9 cm, 18 cm and 21 cm. Is it right-angled? Show how you know.

Answer _____

2. Explain why the exterior angles of any convex polygon add up to 360°. Think about walking all the way round the polygon.

Answer _____

3. Ivo says the interior angles of a heptagon add up to 7 × 180 = 1260°. Explain the mistake and give the correct sum.

Answer _____

4. A right-angled triangle has hypotenuse 10 cm and another side 8 cm. Bella finds the third side as $\sqrt{(10^2 + 8^2)}$. Explain the mistake and find the side.

Answer _____

5. Lina says a regular polygon can have an interior angle of 150°. Is Lina right? Explain.

Answer _____

6. A ladder 10 m long leans against a vertical wall. Its foot is 6 m from the wall on level ground. How high up the wall does it reach?

Answer _____

7. ABCD is a parallelogram with angle A = 114°. Find angles B, C and D. Give reasons.

Answer _____

8. Explain how to construct an angle of 30° with a ruler and compasses only. Which angle do you construct first, and what do you then do to it?

Answer _____