Year 9 Angles and Pythagoras – Foundation

ANSWER KEY HappyKids.fit

Answers and worked solutions · 10 questions

A. Polygon and Pythagoras skills

1. 1440°

Sum = (n − 2) × 180°, with n = 10

(10 − 2) × 180 = 8 × 180 = 1440°

2. 2880°

Sum = (n − 2) × 180°, with n = 18

(18 − 2) × 180 = 16 × 180 = 2880°

3. 30°

Exterior angles add up to 360°

360 ÷ 12 = 30°

4. 165°

Each exterior angle = 360 ÷ 24 = 15°

Interior = 180 − 15 = 165°

5. y = 39°

Exterior angles add up to 360°: 50 + 81 + 50 + 88 + 52 = 321°

y = 360 − 321 = 39°

6. x = 20 cm

Shorter side: $x^2 = 29^2 - 21^2 = 841 - 441 = 400$

x = √400 = 20 cm

7. x = 10 cm

Shorter side: $x^2 = 26^2 - 24^2 = 676 - 576 = 100$

x = √100 = 10 cm

8. x = 15.7 cm

Hypotenuse: $x^2 = 14^2 + 7^2 = 196 + 49 = 245$

x = √245 = 15.7 (1 d.p.) cm

9. 14 sides

(n − 2) × 180 = 2160, so n − 2 = 2160 ÷ 180 = 12

n = 14

10. x = 76°

Angle sum: (5 − 2) × 180 = 540°; known angles 96 + 152 + 103 + 113 = 464°

x = 540 − 464 = 76°