

1. A right-angled triangle has short sides 3 cm and 4 cm. Find the hypotenuse (cm).

2. In a right-angled triangle the hypotenuse is 10 cm and the angle is 30° . The opposite side = $10 \times \sin 30^\circ$. Find it (cm).

3. What is the exact value of $\sin 30^\circ$? (as a decimal)

4. A triangle has $b = 7$, $c = 8$ and the angle between them $A = 40^\circ$. Using $a^2 = 49 + 64 - 2(7)(8)\cos 40^\circ \approx 27.2$, find a (1 dp).

5. A box has a base 6 cm by 8 cm. Find the length of the base diagonal (cm).

6. The hypotenuse of a right-angled triangle is:
☐ the shortest side
☐ the longest side, opposite the right angle
☐ always 5 cm
☐ next to the right angle
7. The angle of elevation is measured from the vertical.
☐ True ☐ False
8. $\cos 60^\circ = 1/2$.
☐ True ☐ False
9. The area of any triangle (two sides a , b with angle C between them) is:
☐ $\frac{1}{2}ab$
☐ $a^2 + b^2$
☐ $\frac{1}{2}ab \sin C$
☐ $ab \cos C$
10. In a 3-D problem you look for a right-angled triangle inside the solid to work with.
☐ True ☐ False

IGCSE Mathematics

1. **5**

$$\sqrt{3^2 + 4^2} = \sqrt{25} = 5 \text{ cm.}$$

2. **5**

$$10 \times \sin 30^\circ = 10 \times 0.5 = 5 \text{ cm.}$$

3. **0.5**

$$\sin 30^\circ = 1/2 = 0.5.$$

4. **5.2**

$$a = \sqrt{27.2} \approx 5.2 \text{ cm.}$$

5. **10**

$$\sqrt{6^2 + 8^2} = \sqrt{100} = 10 \text{ cm.}$$

6. **the longest side, opposite the right angle**

The hypotenuse is the longest side and lies opposite the 90° angle.

7. **False**

Angles of elevation and depression are both measured from the horizontal, not the vertical.

8. **True**

$\cos 60^\circ = 1/2$ is one of the key exact values to memorise.

9. **$\frac{1}{2}ab \sin C$**

Area = $\frac{1}{2}ab \sin C$ uses two sides and the included angle.

10. **True**

The whole 3-D method is to reduce it to a flat right-angled triangle.