

2D Trigonometry

Syllabus tracker [Open it online](#)

Name: _____

Date: _____

Tick one circle for each statement — on screen (click) or with a pen. Then try the quick checks: write your answer in the box, check it against the answers at the end, and tick “right” when you got it. ★ = IGCSE Extended tier only.

Pythagoras' theorem

Finding the hypotenuse or a shorter side.

	Don't know	Shaky	Got it
I can use Pythagoras to find the hypotenuse.	☐	☐	☐
I can use Pythagoras to find a shorter side.	☐	☐	☐

Right-angled trigonometry

SOH CAH TOA for sides and angles; exact values; elevation and depression.

	Don't know	Shaky	Got it
I can choose sin, cos or tan.	☐	☐	☐
I can find a side using trigonometry.	☐	☐	☐
I can find an angle using trigonometry.	☐	☐	☐
I can solve problems with angles of elevation and depression. ★	☐	☐	☐

Bearings

Pythagoras and trigonometry in bearing problems.

	Don't know	Shaky	Got it
I can solve bearing problems.	☐	☐	☐

Sine rule and cosine rule ★

Any triangle, including obtuse angles and the ambiguous case.

	Don't know	Shaky	Got it
I can use the sine rule to find a side. ★	☐	☐	☐
I can use the cosine rule to find a side. ★	☐	☐	☐
I can use the cosine rule to find an angle, including an obtuse one. ★	☐	☐	☐
I can find an obtuse angle from its sine. ★	☐	☐	☐

Area of a triangle ★

Area = $\frac{1}{2}ab \sin C$.

	Don't know	Shaky	Got it
I can use area = $\frac{1}{2}ab \sin C$. ★	☐	☐	☐

Quick checks

One quick question per statement. Answer in the box, then check the answers at the end.

1. A right-angled triangle has shorter sides 9 cm and 12 cm. Find the hypotenuse in cm.

Answer: _____

☐ I got it right

2. The hypotenuse is 13 cm and one side is 5 cm. Find the other side in cm.

Answer: _____

☐ I got it right

3. You know the side opposite the angle and the hypotenuse. Which ratio do you use?

A sin **B** cos **C** tan

Answer: _____

☐ I got it right

4. The angle is 30° and the hypotenuse is 14 cm. Find the side opposite the angle, in cm.

Answer: _____

☐ I got it right

5. The opposite and adjacent sides are both 5 cm. Find the angle in degrees.

Answer: _____

☐ I got it right

6. From 20 m away, the angle of elevation of the top of a tower is 35° . Find its height to 3 significant figures (in m).

Answer: _____

☐ I got it right

7. A boat sails 10 km north then 24 km east. How far is it from its start, in km?

Answer: _____

☐ I got it right

8. In triangle ABC, angle A = 30° , angle B = 45° and a = 8 cm. Find b to 3 significant figures (in cm).

Answer: _____

☐ I got it right

9. Two sides are 5 cm and 8 cm with 60° between them. Find the third side in cm.

Answer: _____

☐ I got it right

10. A triangle has sides 3 cm, 5 cm and 7 cm. Find its largest angle in degrees.

Answer: _____

☐ I got it right

11. $\sin x = 0.5$ and x is obtuse. What is x?

A 150° **B** 30° **C** 120° **D** 60°

Answer: _____

☐ I got it right

12. Find the area of a triangle with sides 8 cm and 10 cm and 30° between them, in cm^2 .

Answer: _____

☐ I got it right

Answers

Try every question first, then check.

1. 15

2. 12

3. A: $\sin$

4. 7

5. 45

6. 14.0

7. 26

8. 11.3

9. 7

10. 120

11. A: 150°

12. 20