Foundation tier unit 12 check in test

Calculator

Q1. Calculate the length of AB.
Give your answer correct to 1 decimal place.

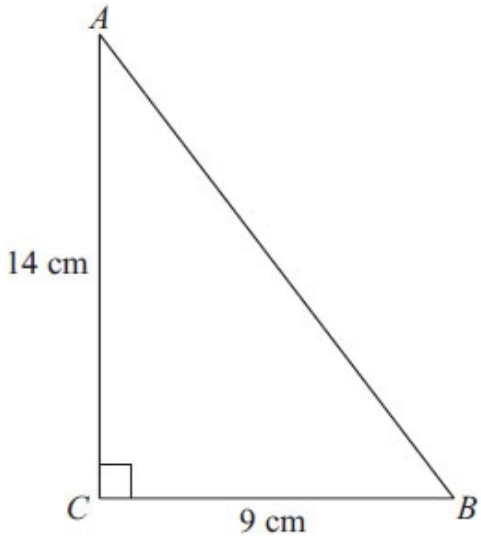
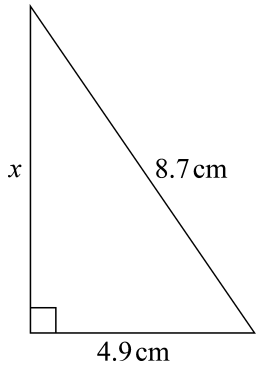
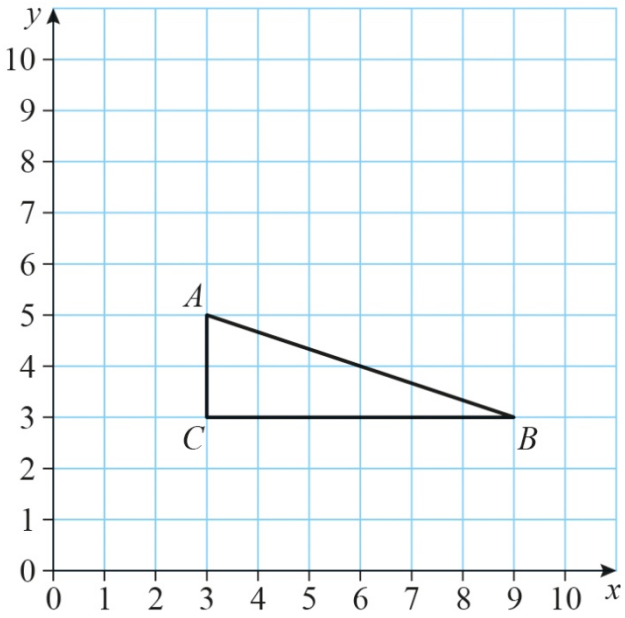


Diagram **NOT** accurately drawn

Q2. Calculate the length labelled x in this right-angled triangle.
Give your answer correct to 1 decimal place.



Q3. The diagram shows triangle *ABC* on a coordinate grid.



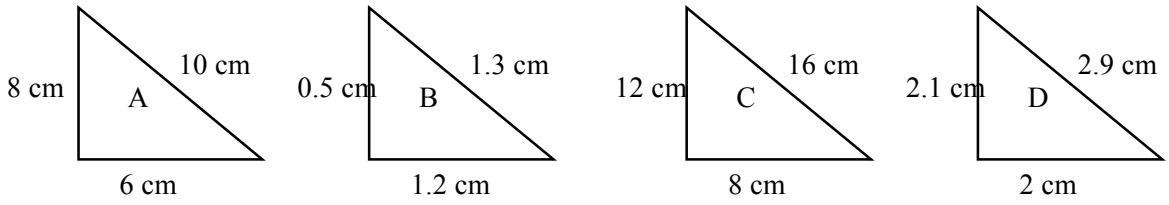
Find the length of *AB*.
Give your answer in surd form.

Q4. Two points have these coordinates.

A (4, 2)
B (12, 7)

Find the length of the line segment AB.
Give your answer correct to 1 decimal place.

Q5. Which of these triangles is not a right-angled triangle?



Q6. Calculate the value of x.
Give your answer correct to 3 significant figures.

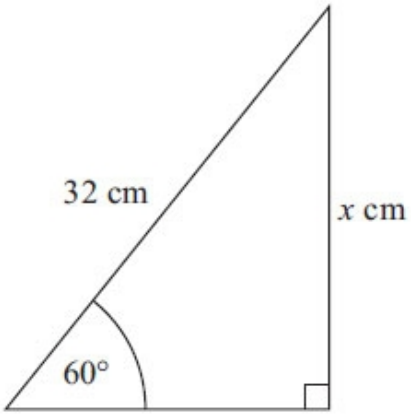
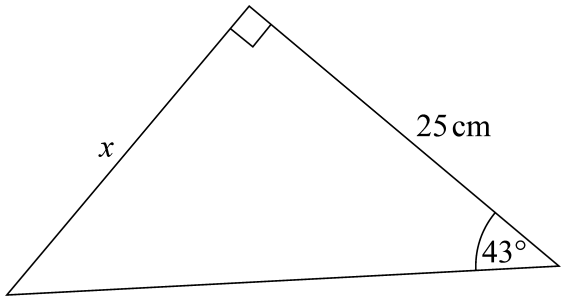
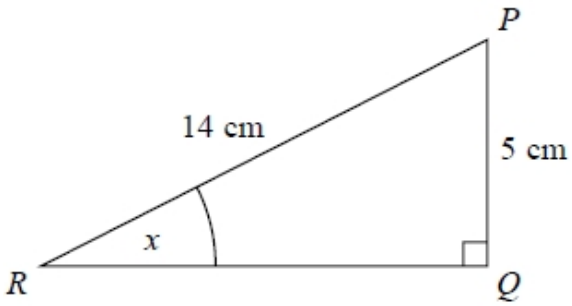


Diagram **NOT** accurately drawn

Q7. Calculate the length labelled x in this right-angled triangle.
Give your answer correct to 3 significant figures.



Q8. PQR is a right-angled triangle.



Work out the size of the angle marked x.
Give your answer correct to 1 decimal place.

Q9. *LMN* is a right-angled triangle.

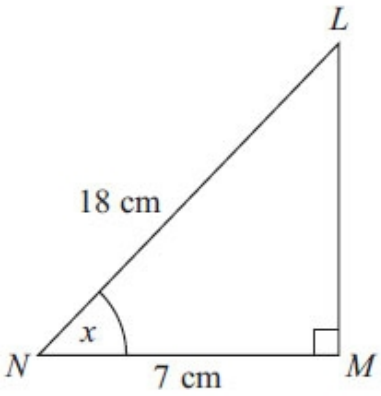
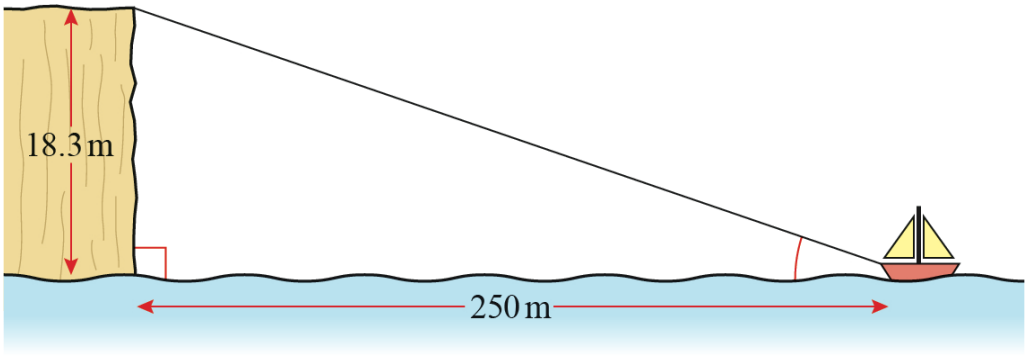


Diagram **NOT** accurately drawn

Calculate the size of the angle marked x.
Give your answer correct to one decimal place.

Q10. A boat is anchored 250 m from a cliff.
The cliff is 18.3 m high.

Find the angle of elevation of the top of the cliff from the boat.
Give your answer correct to 1 decimal place.



Topics listed in objectives

- Understand, recall and use Pythagoras' Theorem in 2D, including leaving answers in surd form and being able to justify if a triangle is right-angled or not;
- Calculate the length of the hypotenuse and of a shorter side in a right-angled triangle, including decimal lengths and a range of units;
- Apply Pythagoras' Theorem with a triangle drawn on a coordinate grid;
- Calculate the length of a line segment AB given pairs of points;
- Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures;
- Use the trigonometric ratios to solve 2D problems including angles of elevation and depression;
- Round answers to appropriate degree of accuracy, either to a given number of significant figures or decimal places, or make a sensible decision on rounding in context of question;
- Know the exact values of sin θ and cos θ for $\theta = 0°$, 30°, 45°, 60° and 90°; know the exact value of tan θ for $\theta = 0°$, 30°, 45° and 60°.

Answers

Q1. 16.6 cm
Q2. 7.2 cm
Q3. $\sqrt{40}$
Q4. 9.4
Q5. C
Q6. $x = 27.7$ cm
Q7. $x = 23.3$ cm
Q8. 20.9°
Q9. 67.1°
Q10. 4.2°