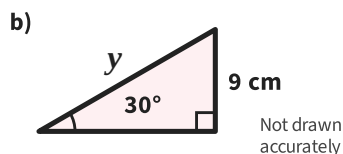
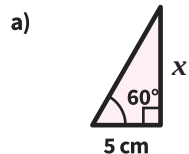


1 Exact trig values

Without a calculator, find the exact lengths x and y .



2 Exact trig values

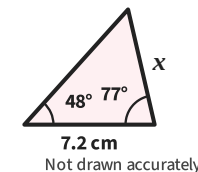
Do not use a calculator.

- a) Work out the exact value of $\sin 60^\circ \div \cos 60^\circ$. Which trig value is it equal to?
- b) Solve $2 \cos \theta = \sqrt{3}$ for θ between 0° and 90° .

3 Sine rule: finding a side

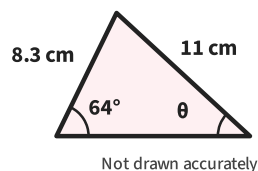
Give each answer to 1 decimal place.

- a) Find x .
- b) Coastguards A and B are 5 km apart on a straight coast. A boat is at X. Angle XAB = 62° and angle XBA = 49° . Find AX.



4 Sine rule: finding an angle

- a) Find the angle θ to 1 decimal place.
- b) Explain why θ cannot be an obtuse angle.



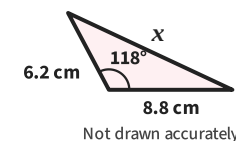
Pythagoras' theorem and trigonometry 2

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5 The cosine rule

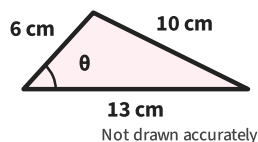
Give each answer to 1 decimal place.

- a) Find x .
- b) A parallelogram has sides of 5 cm and 9 cm and an angle of 65° . Find its longer diagonal.



6 The cosine rule

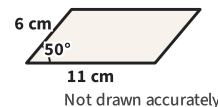
- a) Find the angle θ to 1 decimal place.
- b) A triangle has sides of 5 cm, 7 cm and 8 cm. Show that one of its angles is exactly 60° .



7 Area of a triangle: $\frac{1}{2}ab \sin C$

Give each answer to 1 decimal place.

- a) Find the area of this parallelogram.
- b) Two sides of a triangle meet at 72° . One is 8.2 cm long and the area is 35 cm^2 . Find the other.



8 Area of a triangle: $\frac{1}{2}ab \sin C$

Give each answer to 1 decimal place.

- a) The regular pentagon has centre O. Each vertex is 6 cm from O. Find its area.
- b) Find the area of a triangle with sides of 7 cm, 9 cm and 12 cm.

