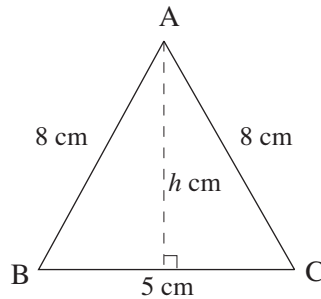


UNIT 34 *Pythagoras' Theorem and Trigonometric Ratios*

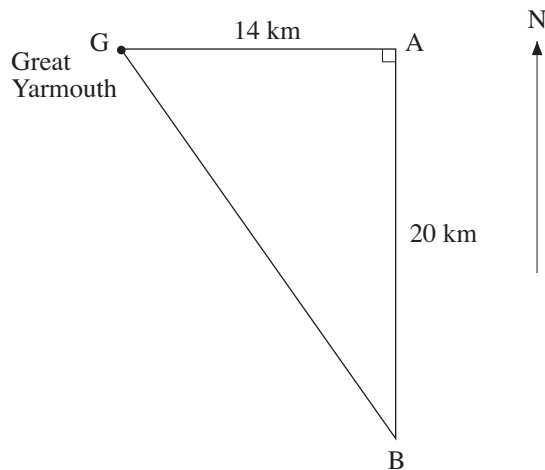
CSEC Revision Test

1. A triangle has sides $AB = AC = 8$ cm and $BC = 5$ cm. Find the length of the perpendicular height, h .



(3 marks)

2. The diagram represents a boat's voyage from Great Yarmouth to position B. The boat sails due east from Great Yarmouth for 14 km to a position A. It then changes course and sails for 20 km to a position B.



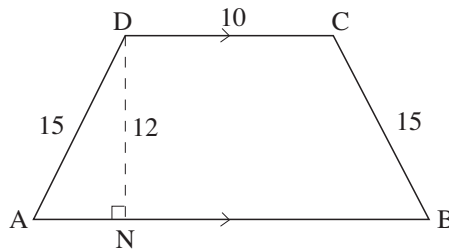
On a map the distance between G and A is 56 cm.

- (a) Work out the scale of the map. Give your answer in the form $1 : n$, where n is an integer. (2 marks)
- (b) Calculate the distance, in km, of B from Great Yarmouth. (2 marks)
- (c) Calculate the bearing of Great Yarmouth from B. (3 marks)

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CSEC Revision Test

3. ABCD is a trapezium in which AB is parallel to DC.
 N is the point on AB such that $\widehat{DNA} = 90^\circ$.
 AD = BC = 15 cm, DN = 12 cm and DC = 10 cm.

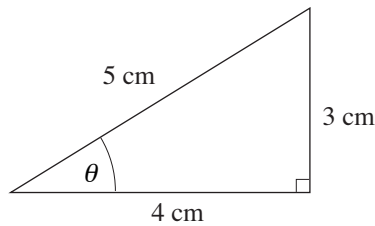


Not to scale

Calculate

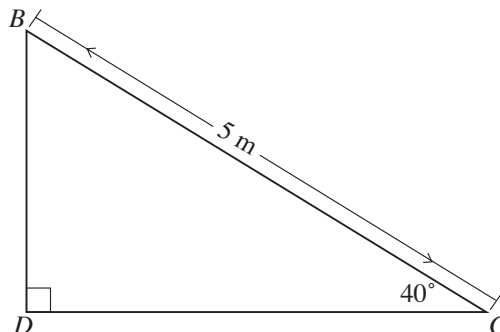
- (a) AN, (2 marks)
 (b) the area of ABCD. (2 marks)
4. For the triangle below, find

- (a) $\cos \theta$ (b) $\sin \theta$ (c) $\tan \theta$



(3 marks)

5. In the figure below, **not drawn to scale**, $BC = 5$ metres, angle $BCD = 40^\circ$ and angle BDC is a right angle.



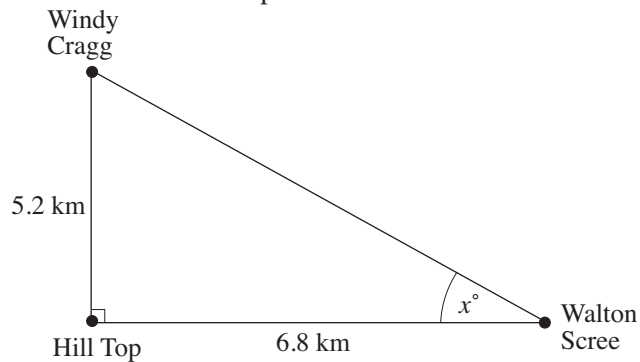
- (a) Calculate the length, in metres, of BD . (2 marks)
 (b) Calculate the length, in metres, of DC . (2 marks)
 (c) Prove that the area in m^2 of the triangle BDC is $12.5 \sin 40^\circ \cos 40^\circ$. (2 marks)

UNIT 34 *Pythagoras' Theorem and Trigonometric Ratios* CSEC Revision Test

6. The diagram shows three places, which are on the same horizontal plane.

Windy Crag is 5.2 km due north of Hill Top.

Walton Scree is 6.8 km due east of Hill Top.



- (a) Calculate the distance from Walton Scree to Windy Crag.
Give your answer correct to 1 decimal place. (2 marks)
- (b) Calculate the size of the angle marked x° in the diagram.
Give your answer correct to 1 decimal place. (2 marks)

TOTAL MARKS: 27

UNIT 34 *Pythagoras' Theorem and Trigonometric Ratios*

CSEC Revision Test ANSWERS

1. $h^2 = 8^2 - 2.5^2 \Rightarrow h = 7.60$ cm M1 A1 A1 (3 marks)
2. (a) 1 : 25000 (b) 24.4 km (c) $\hat{A}BG \approx 35^\circ, 325^\circ$ B2 M1 A1 M1 A1 A1 (7 marks)
3. (a) 9 cm (b) 228 cm² M1 A1 M1 A1 (4 marks)
4. (a) $\frac{4}{5}$ (b) $\frac{3}{5}$ (c) $\frac{3}{4}$ B1 B1 B1 (3 marks)
5. (a) $BD = 5 \sin 40^\circ (\approx 3.21$ m) M1 A1
 (b) $DC = 5 \cos 40^\circ (\approx 3.83$ m) M1 A1
 (c) Area = $\frac{1}{2} \times BD \times DC$ M1
 $= \frac{25}{2} \sin 40^\circ \cos 40^\circ$ A1 (6 marks)
6. (a) 8.6 km M1 A1
 (b) 37.4° M1 A1 (4 marks)

(TOTAL MARKS 27)