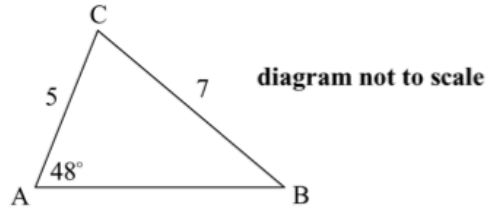


Sine Rule, Cos rule

1)

2. In triangle ABC, $AC = 5$, $BC = 7$, $\hat{A} = 48^\circ$, as shown in the diagram.



Find \hat{B} , giving your answer correct to the nearest degree.

Working:

Answer:

N02/520/S(1)

2)

2. The graph of the function $f(x) = 3x - 4$ intersects the x -axis at A and the y -axis at B.

(a) Find the coordinates of

(i) A;

(ii) B.

(b) Let O denote the origin. Find the area of triangle OAB.

Working:

Answers:

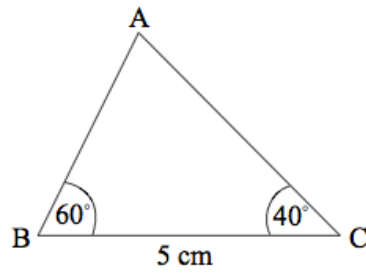
(a) (i) _____

(ii) _____

(b) _____

N03/520/S(1)

- 3) 1. The following diagram shows a triangle ABC, where $BC = 5 \text{ cm}$, $\hat{B} = 60^\circ$, $\hat{C} = 40^\circ$.



- (a) Calculate AB.
(b) Find the area of the triangle.

Working:

Answers:

(a) _____

(b) _____

N04/5/MATME/SP1/ENG/TZ0/XX

- 4) 1. In triangle PQR, PQ is 10 cm, QR is 8 cm and angle PQR is acute. The area of the triangle is 20 cm^2 . Find the size of angle PQR.

Working:

Answer:

N05/5/MATME/SP1/ENG/TZ0/XX

2. Using sine rule: $\frac{\sin B}{5} = \frac{\sin 48^\circ}{7}$ (M1)(A1)
- $\Rightarrow \sin B = \frac{5}{7} \sin 48^\circ = 0.5308\dots$ (M1)
- $\Rightarrow B = \arcsin(0.5308) = 32.06^\circ$ (M1)(A1)
- $= 32^\circ$ (nearest degree) (A1) (C6)

Note: Award a maximum of [5 marks] if candidates give the answer in radians (0.560).

arks]

QUESTION 2

- (a) (i) A is $\left(\frac{4}{3}, 0\right)$ A1 A1 C2
- (ii) B is $(0, -4)$ A1 A1 C2

Notes: In each of parts (i) and (ii), award C1 if A and B are interchanged, C1 if intercepts given instead of coordinates.

- (b) Area = $\frac{1}{2} \times 4 \times \frac{4}{3}$ M1
- $= \frac{8}{3} (= 2.67)$ A1 C2

QUESTION 1

- (a) Angle $A = 80^\circ$ (A1)
- $\frac{AB}{\sin 40^\circ} = \frac{5}{\sin 80^\circ}$ (M1)
- $AB = 3.26$ cm (A1) (C3)
- (b) Area = $\frac{1}{2} ac \sin B = \frac{1}{2} (5)(3.26) \sin 60^\circ$ (M1)(A1)
- $= 7.07$ (accept 7.06) cm^2 (A1) (C3)

Note: Penalize once in this question for absence of units.

QUESTION 1

- Using area of a triangle = $\frac{1}{2} ab \sin C$ (M1)
- $20 = \frac{1}{2} (10)(8) \sin Q$ (accept any letter for Q) (A1)(A1)(A1)
- $\sin Q = 0.5$ (A1)
- $\hat{PQR} = 30^\circ$ or $\frac{\pi}{6}$ or 0.524 (A1) (C6)

