

Trigonometric Ratios – Review and Some Preliminary Results



- 16 1** For the angle θ , $\sin \theta = \frac{7}{25}$ and $\cos \theta = -\frac{24}{25}$.

1 [Solution](#)

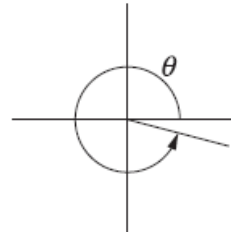
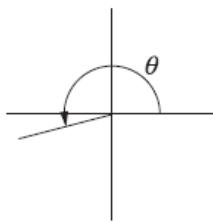
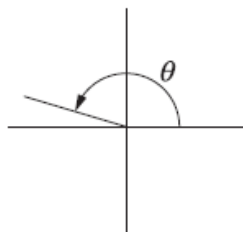
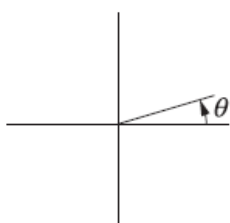
Which diagram best shows the angle θ ?

(A)

(B)

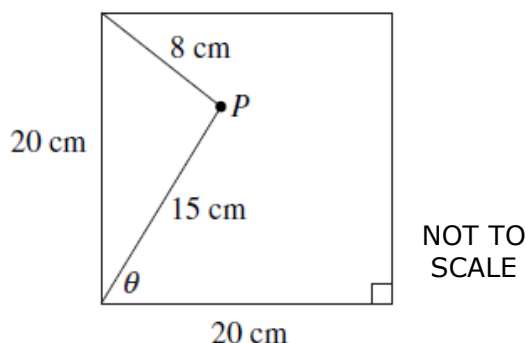
(C)

(D)



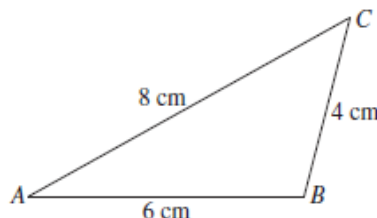
- 16 12 c** Square tiles of side length 20 cm are being used to tile a bathroom. The tiler needs to drill a hole in one of the tiles at a point P which is 8 cm from one corner and 15 cm from an adjacent corner. To locate the point P the tiler needs to know the size of the angle θ shown in the diagram. Find the size of the angle θ to the nearest degree.

3 [Solution](#)



- 15 13 a** The diagram shows $\triangle ABC$ with sides $AB = 6$ cm, $BC = 4$ cm and $AC = 8$ cm.
- (i) Show that $\cos A = \frac{7}{8}$.
- (ii) By finding the exact value of $\sin A$, determine the exact value of the area of $\triangle ABC$.

[Solution](#)

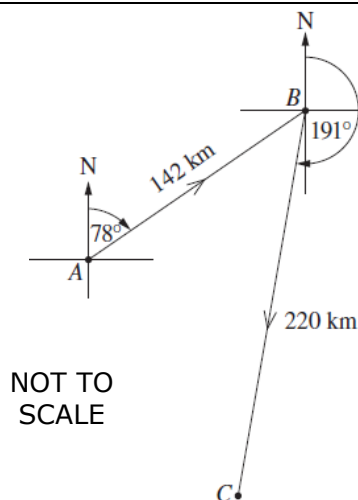


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Not to scale

- 14 13 d** Chris leaves island A in a boat and sails 142 km on a bearing of 078° to island B . Chris then sails on a bearing of 191° for 220 km to island C , as shown in the diagram.
- (i) Show that the distance from island C to island A is approximately 210 km.
- (ii) Chris wants to sail from island C directly to island A . On what bearing should Chris sail? Give your answer correct to the nearest degree.

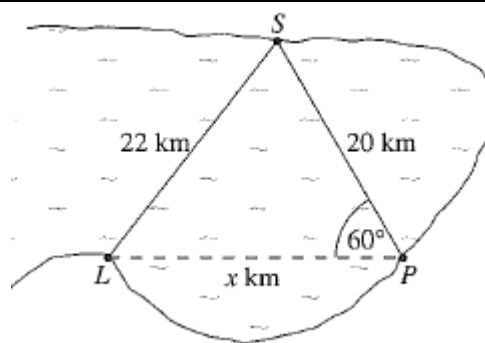
[Solution](#)



2
3

- 11 8a** In the diagram, the shop at S is 20 kilometres across the bay from the post office at P . The distance from the shop to the lighthouse at L is 22 kilometres and $\angle SPL$ is 60° . Let the distance PL be x kilometres.

- (i) Use the cosine rule to show that $x^2 - 20x - 84 = 0$.
(ii) Hence, find the distance from the post office to the lighthouse. Give your answer correct to the nearest kilometre.

[Solution](#)**1****2**

- 06 1d** Find the value of θ in the diagram. Give your answer to the nearest degree.

**2**[Solution](#)

- 05 3b** The lengths of the sides of a triangle are 7 cm, 8 cm and 13 cm.

- (i) Find the size of the angle opposite the longest side.
(ii) Find the area of the triangle.

2**1**[Solution](#)