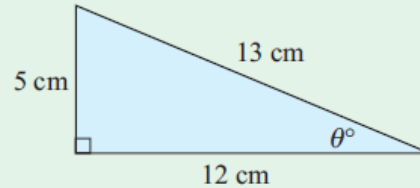


Trigonometry Review

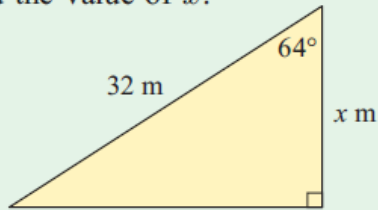
REVIEW SET 12A

1 Find $\sin \theta$, $\cos \theta$ and $\tan \theta$ for the triangle:

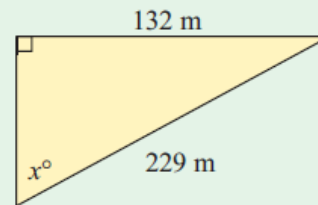


2 Find the value of x :

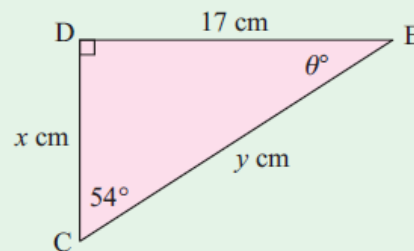
a



b



3 Find the measure of all unknown sides and angles in triangle CDE:



4 From a point 120 m horizontally from the base of a building, the angle of elevation to the top of the building is 34° . Find the height of the building.

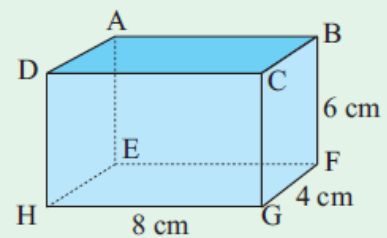
5 A flagpole 17 m high is supported by 3 ropes which meet the ground at angles of 55° . Determine the total length of the three ropes.

6 A ship sails 40 km on a bearing 056° . How far is the ship north of its starting point?

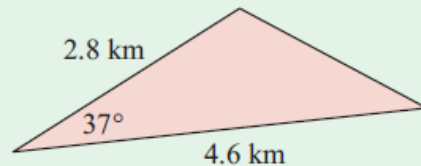
7 Find the angle:

a BG makes with FG

b AG makes with the base plane EFGH.



8 Find the area of:



9 Use the diagram alongside, to write in terms of a and b , a value for:

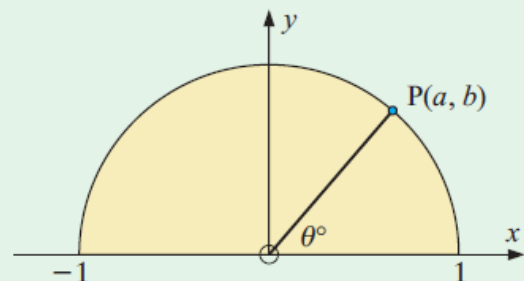
a $\cos \theta^\circ$

b $\sin \theta^\circ$

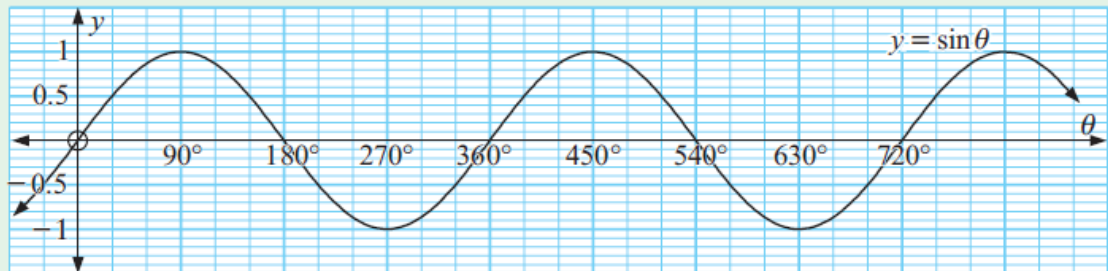
c $\tan \theta^\circ$

d $\sin(180 - \theta)^\circ$

e $\cos(180 - \theta)^\circ$

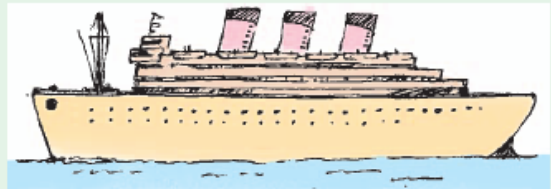


- 10** a Find the obtuse angle with the same sine as 60° .
 b Find the acute angle with the same cosine as 330° .
 c Without using your calculator, find $\tan 300^\circ$, given that $\tan 60^\circ \doteq 1.732$.
- 11** Below is a graph of $y = \sin \theta$. Use the graph to solve these equations (find θ), correct to 1 decimal place:
 a $\sin \theta = 0.5$, $0^\circ \leq \theta \leq 720^\circ$ b $\sin \theta = -0.7$, $0^\circ \leq \theta \leq 720^\circ$



Review Set 12B

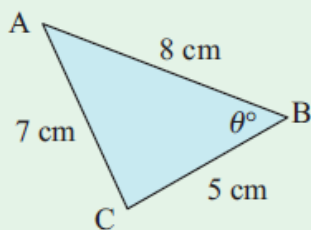
- 7** A ship leaves port P and travels for 50 km in the direction 081° . It then sails 60 km in the direction 171° to an island port Q.



- a How far is Q from P?
 b If the ship wishes to sail back directly to P from Q, in what direction must it sail?

- 9** If $\sin \theta = \frac{3}{5}$, find the value of $\cos \theta$ and $\tan \theta$, given that θ is acute.
 (Hint: Drawing a sketch of a triangle may help.)

10



- a Find θ .
 b Hence, find the area of triangle ABC.

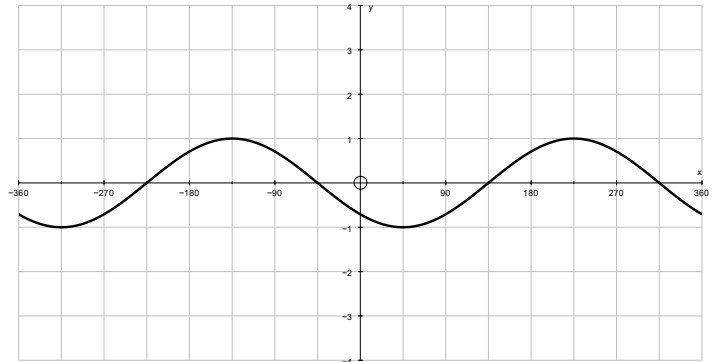
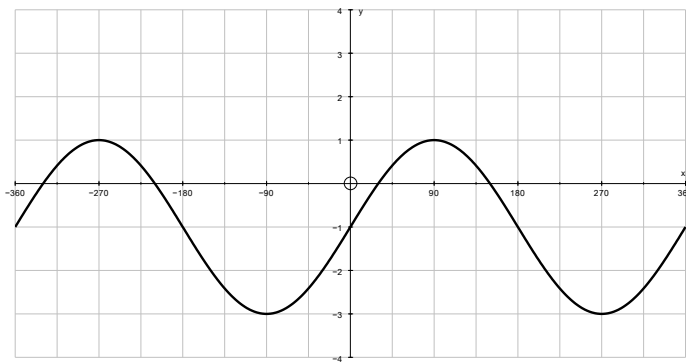
Extra Review

- Write as a trig ratio of an acute angle:

a) $\sin 165^\circ$	b) $\tan 230^\circ$	c) $\cos (-110^\circ)$	d) $\sin (-400^\circ)$
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- Find the exact value of these ratios:

a) $\tan 120^\circ$	b) $\cos 240^\circ$	c) $\sin (-210^\circ)$	d) $\tan 135^\circ$
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- Given that $\cos A = 2/5$, and $\sin A < 0$, find the exact values of $\sin A$ and $\tan A$.

4. a) What transformation have these functions undergone? Assume the first function had a parent function of $y = \sin x$, and the second was $y = \cos x$.
 b) Find the equation of these graphs



Answers:

REVIEW SET 12A

- 1 $\sin \theta = \frac{5}{13}$, $\cos \theta = \frac{12}{13}$, $\tan \theta = \frac{5}{12}$
 2 a $x = 14.03$ b $x = 35.20$
 3 $\theta = 36$, $x = 12.35$, $y = 21.01$ 4 80.94 m 5 62.26 m
 6 22.37 km 7 a 56.3° b 33.9° 8 3.88 km^2
 9 a a b b c $\frac{b}{a}$ d b e $-a$
 10 a 120° b 30° c -1.732
 11 a $\theta = 30^\circ, 150^\circ, 390^\circ, 510^\circ$
 b $224.4^\circ, 315.6^\circ, 584.4^\circ, 675.6^\circ$
 12 a $(\sin \theta + \cos \theta)(\sin \theta - \cos \theta)$ b $4(\cos \theta + 1)(\cos \theta - 1)$
 13 a $\tan \theta - 1$ b $2 \sin \theta$

REVIEW SET 12B

- 1 a 0.2756 b 0.7431 c -8.1443
 2 a $x = 38.68$ b $x = 37.07$
 3 $x = 25.75$, $\alpha = 36.42$, $\theta = 53.58$ 4 64.03 km, 128.7°
 5 638.3 m 6 32.20° 7 a 78.10 km b 311.2°
 8 a 45° b 60° 9 $\cos \theta = \frac{4}{5}$, $\tan \theta = \frac{3}{4}$
 10 a 60 b 17.3 cm^2 11 a 23° b 240° c 128°

Extra Review

1. a) $\sin 15^\circ$ b) $\tan 50^\circ$ c) $-\cos 70^\circ$ d) $-\sin 40^\circ$
 2. a) $-\sqrt{3}$ b) -0.5 c) 0.5 d) -1
 3. $\sin A = -\frac{\sqrt{21}}{5}$ $\tan A = -\frac{\sqrt{21}}{2}$
 4. a) vertical stretch of 2, vertical translation down 1 a) \cos graph reflection in x axis, horizontal translation right 45°
 b) $y = 2 \sin(x) - 1$ b) $y = -\cos(x - 45^\circ)$