

1 Find to 3 decimal places the value of

a $\sin 131^\circ$ b $\tan 340.5^\circ$ c $\cos 418^\circ$ d $\sin (-165.2^\circ)$

2 Give the exact value of

a $\cos 60^\circ$ b $\sin 45^\circ$ c $\tan 45^\circ$ d $\cos 30^\circ$
 e $\sin 90^\circ$ f $\tan 30^\circ$ g $\cos 120^\circ$ h $\sin 135^\circ$
 i $\tan 210^\circ$ j $\cos 225^\circ$ k $\sin 300^\circ$ l $\tan 120^\circ$
 m $\cos 330^\circ$ n $\tan 150^\circ$ o $\cos (-60^\circ)$ p $\sin 405^\circ$
 q $\tan (-45^\circ)$ r $\sin (-240^\circ)$ s $\tan 570^\circ$ t $\cos (-150^\circ)$

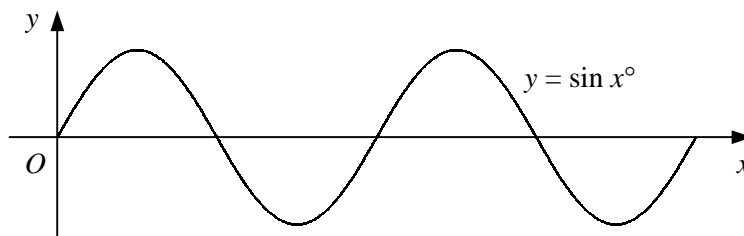
3 Find to 3 decimal places the value of

a $\cos 0.42^\circ$ b $\sin 4.16^\circ$ c $\tan (-3.1^\circ)$ d $\cos 11.25^\circ$

4 Give the exact value of

a $\sin \frac{\pi}{6}$ b $\cos \frac{\pi}{2}$ c $\sin \frac{\pi}{4}$ d $\tan \frac{\pi}{3}$
 e $\cos \frac{\pi}{3}$ f $\sin \frac{2\pi}{3}$ g $\tan \frac{3\pi}{4}$ h $\cos \frac{5\pi}{6}$
 i $\tan \frac{5\pi}{3}$ j $\cos \frac{5\pi}{4}$ k $\sin (-\frac{\pi}{6})$ l $\tan (-\frac{5\pi}{6})$
 m $\sin 3\pi$ n $\tan (-\frac{5\pi}{4})$ o $\cos \frac{8\pi}{3}$ p $\sin (-\frac{7\pi}{3})$

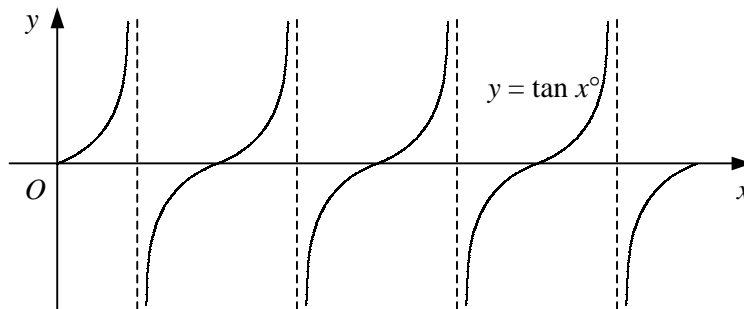
5



The graph shows the curve $y = \sin x^\circ$ in the interval $0 \leq x \leq 720$.

- a Write down the coordinates of any points where the curve intersects the coordinate axes.
 b Write down the coordinates of the turning points of the curve.

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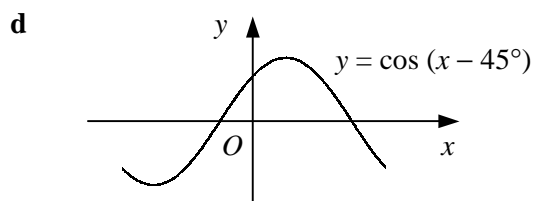
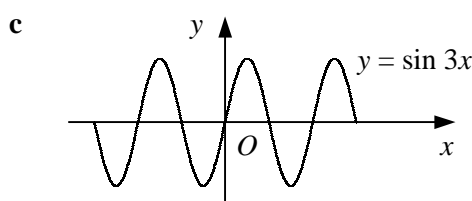
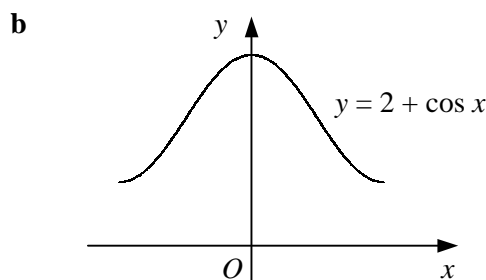
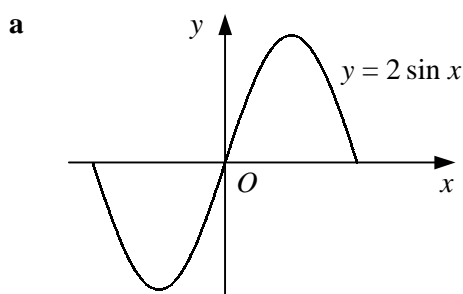
The graph shows the curve $y = \tan x^\circ$ in the interval $0 \leq x \leq 720$.

- a Write down the coordinates of any points where the curve intersects the coordinate axes.
 b Write down the equations of the asymptotes.

- 7 Describe the transformation that maps the graph of $y = \sin x^\circ$ onto the graph of
- a** $y = 3 \sin x^\circ$ **b** $y = \sin 4x^\circ$ **c** $y = \sin (x + 60)^\circ$ **d** $y = \sin (-x^\circ)$
- 8 Sketch each of the following pairs of curves on the same set of axes in the interval $0 \leq x \leq 360^\circ$.
- a** $y = \cos x$ and $y = 3 \cos x$ **b** $y = \sin x$ and $y = \sin (x - 30^\circ)$
c $y = \cos x$ and $y = \cos 2x$ **d** $y = \tan x$ and $y = 2 + \tan x$
e $y = \sin x$ and $y = -\sin x$ **f** $y = \cos x$ and $y = \cos (x + 60^\circ)$
g $y = \tan x$ and $y = \tan \frac{1}{2}x$ **h** $y = \sin x$ and $y = 1 + \sin x$

- 9 Each curve is shown for the interval $-180^\circ \leq x \leq 180^\circ$.

Write down the coordinates of the turning points of each curve in this interval.



- 10 Write down the period of each of the following graphs.

- a** $y = \sin x^\circ$ **b** $y = \tan x^\circ$ **c** $y = 2 \cos x^\circ$
d $y = \sin 2x^\circ$ **e** $y = \tan (x + 30)^\circ$ **f** $y = \cos \frac{1}{3}x^\circ$

- 11 Sketch each of the following curves for x in the interval $0 \leq x \leq 360$. Show the coordinates of any points of intersection with the coordinate axes and the equations of any asymptotes.

- a** $y = \tan x^\circ$ **b** $y = \cos (x + 30)^\circ$ **c** $y = \sin 2x^\circ$
d $y = 1 + \cos x^\circ$ **e** $y = \sin \frac{1}{2}x^\circ$ **f** $y = \tan (x + 90)^\circ$
g $y = \sin (x - 45)^\circ$ **h** $y = -\tan x^\circ$ **i** $y = \cos (x - 120)^\circ$

- 12 Sketch each of the following curves for x in the interval $0 \leq x \leq 2\pi$. Show the coordinates of any turning points and the equations of any asymptotes.

- a** $y = \cos x$ **b** $y = 3 \sin x$ **c** $y = \tan 2x$
d $y = \sin (x - \frac{\pi}{3})$ **e** $y = \cos \frac{1}{3}x$ **f** $y = \sin x - 2$
g $y = \tan (x + \frac{\pi}{4})$ **h** $y = \sin \frac{3}{4}x$ **i** $y = \cos (x - \frac{\pi}{6})$