

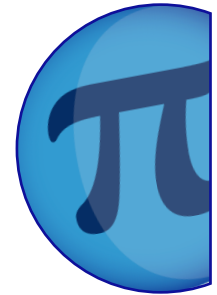


What Do Sine Waves Sound Like?

NAME:

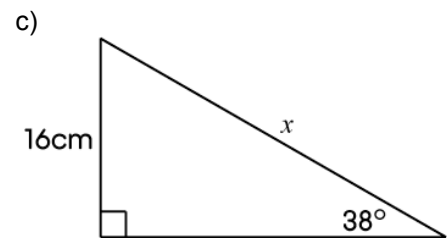
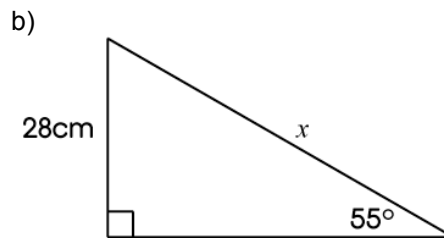
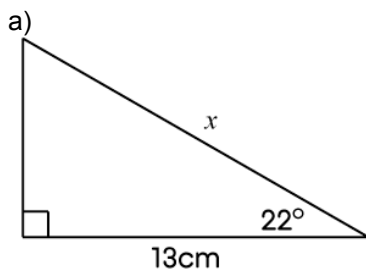
CLASS:

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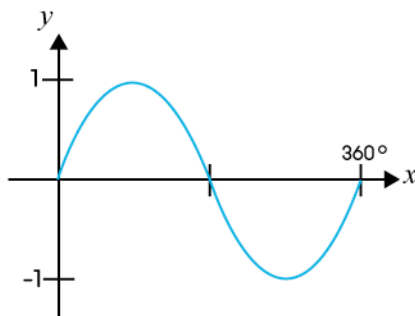


Basic

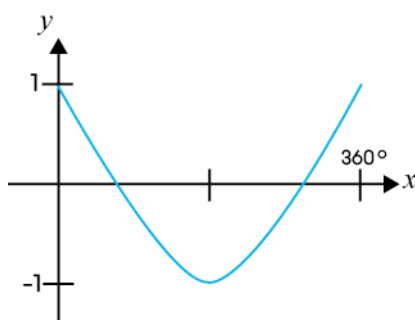
1) Find the length of the side marked x in each of the following:



2) What is the following graph?



3) What is the following graph?



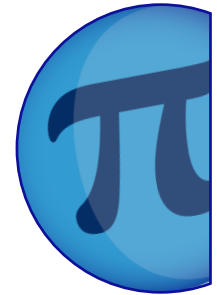


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Core

1) Find the following to three decimal places:

a) $\sin 35^\circ$

b) $\sin 90^\circ$

c) $\sin 109^\circ$

d) $\sin 135^\circ$

e) $\cos 55^\circ$

f) $\cos 90^\circ$

g) $\cos 122^\circ$

h) $\cos 142^\circ$

(i) $\tan 65^\circ$

j) $\tan 85^\circ$

k) $\tan 135^\circ$

l) $\tan 156^\circ$

2) Solve the following trigonometric equations for $0 \leq x \leq 90^\circ$:

a) $\sin x^\circ = 0.707$

b) $\cos x^\circ = 0.927$

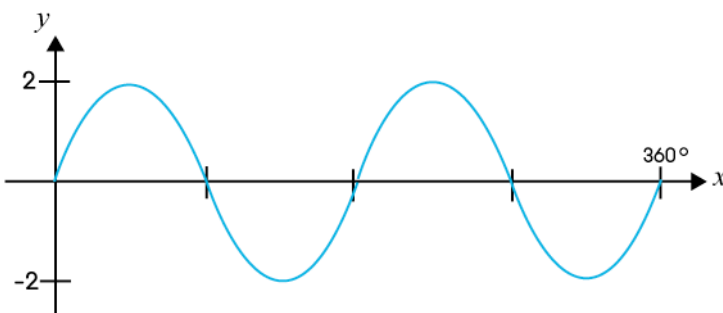
c) $\tan x^\circ = 4.915$

3) Solve the following equations where $0 \leq x \leq 360^\circ$:

a) $2\sin x^\circ = 1$

b) $6\cos x^\circ = 3$

4) The following graph is of the form $y = a \sin bx^\circ$. What are the values of a and b ?



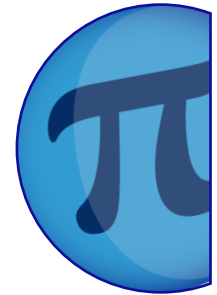


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Advanced

1) Solve the following trigonometric equations for $0 \leq x \leq 90^\circ$:

a) $\sin x^\circ = 0.729$

b) $\cos x^\circ = 0.208$

c) $\tan x^\circ = 0.158$

2) Solve the following equations where $0 \leq x \leq 360^\circ$:

a) $5\sin x^\circ = -3$

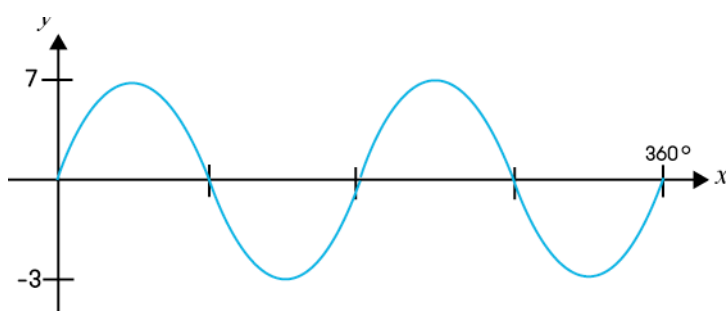
b) $3\tan x^\circ = 1.5$

c) $7\cos x^\circ - 4 = 0$

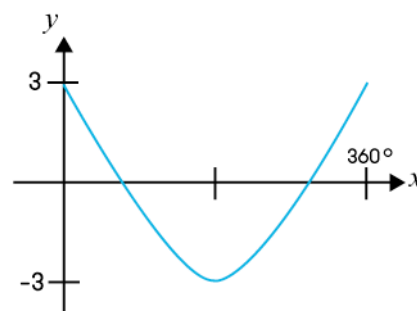
d) $11\tan x^\circ + 7 = 20$

3) Write the equations of the following graphs:

a)



b)





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ANSWERS

Basic

1) a) $x = 14.02\text{cm}$

b) $x = 34.18\text{m}$

c) $x = 20.48\text{cm}$

2) $y = \sin x$

3) $y = \cos x$

Core

1) a) 0.574

b) 1

c) 0.946

d) 0.707

e) 0.574

f) 0

g) -0.530

h) -0.788

i) 2.145

j) 11.430

k) -1

l) -0.445

2) a) 45°

b) 22°

c) 78°

3) a) $x = 30^\circ, 150^\circ$

b) $x = 60^\circ, 300^\circ$

4) $a = 2; b = 2$

Advanced

1) a) 47°

b) 78°

c) 9°

2) a) $x = 216.9^\circ, 323.1^\circ$

b) $x = 26.6^\circ, 206.6^\circ$

c) $x = 55.2^\circ, 304.8^\circ$

d) $x = 49.8^\circ, 229.8^\circ$

3) a) $y = 7 \sin 4x^\circ$

b) $y = 3 \cos x^\circ$