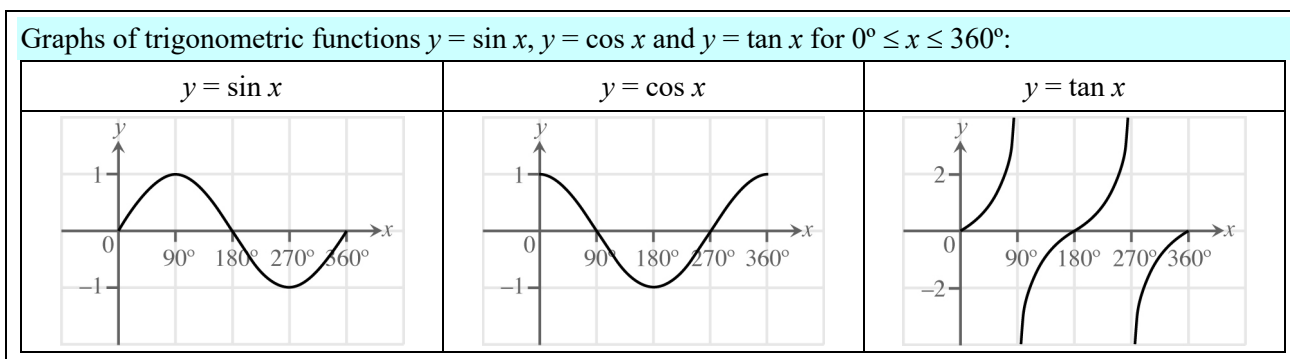


Lesson Worksheet 6.2

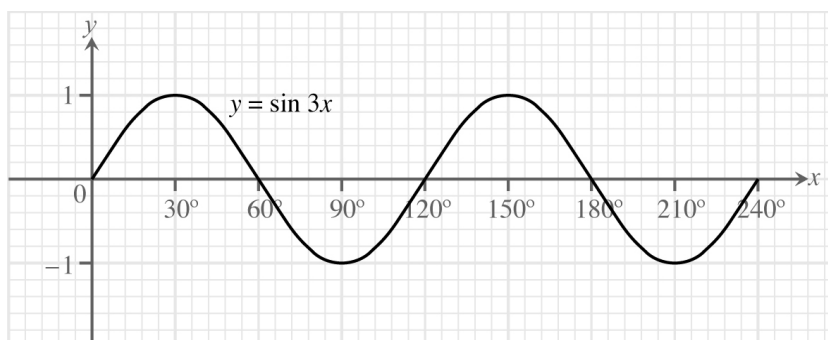
Objective: To recognize the graphs and the properties of trigonometric functions.



1. Using the above graphs, complete the following table for $0^\circ \leq x \leq 360^\circ$.

	$y = \sin x$	$y = \cos x$	$y = \tan x$
(a) Maximum value			/
(b) Minimum value			/
(c) x -intercepts			
(d) Period	360°	360°	

2. The figure shows the graph of the trigonometric function $y = \sin 3x$ for $0^\circ \leq x \leq 240^\circ$. → Exercise 6.2: 1 – 4



- (a) The maximum value of $y = \sin 3x$ is _____.
- (b) The minimum value of $y = \sin 3x$ is _____.
- (c) The period of $y = \sin 3x$ is _____.
3. Find the maximum and minimum values of $4 \sin x$ algebraically.

Maximum value of $4 \sin x = 4(\quad)$

=
= _____

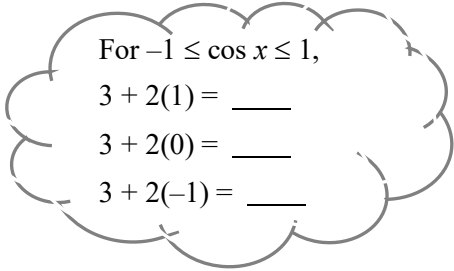
Minimum value of $4 \sin x = 4(\quad)$

=
= _____

4. Find the maximum and minimum values of $(3 + 2 \cos x)$ algebraically.

Maximum value of $(3 + 2 \cos x)$
 $= 3 + 2(\quad)$
 $=$

Minimum value of $(3 + 2 \cos x)$
 $= 3 + 2(\quad)$
 $=$



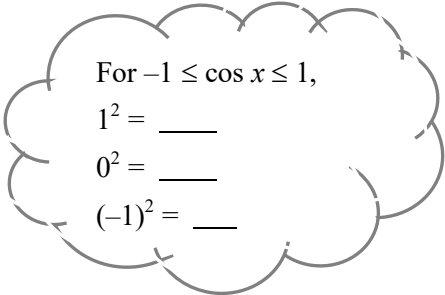
5. Find the maximum and minimum values of $(5 \sin x - 1)$ algebraically.

6. Find the maximum and minimum values of $\cos^2 x$ algebraically.

→Exercise 6.2: 5 – 10

Maximum value of $\cos^2 x$
 $=$

Minimum value of $\cos^2 x$
 $=$



Try More

7. Find the maximum and minimum values of $(4 + 3 \sin^2 x)$ algebraically.

Lesson Worksheet 6.3C

Objective: To simplify trigonometric expressions.

Trigonometric ratios of $(180^\circ \pm \theta)$	Trigonometric ratios of $(360^\circ \pm \theta)$	Trigonometric ratios of $(-\theta)$
$\sin(180^\circ - \theta) = \sin \theta$	$\sin(360^\circ - \theta) = -\sin \theta$	$\sin(-\theta) = -\sin \theta$
$\cos(180^\circ - \theta) = -\cos \theta$	$\cos(360^\circ - \theta) = \cos \theta$	$\cos(-\theta) = \cos \theta$
$\tan(180^\circ - \theta) = -\tan \theta$	$\tan(360^\circ - \theta) = -\tan \theta$	$\tan(-\theta) = -\tan \theta$
$\sin(180^\circ + \theta) = -\sin \theta$	$\sin(360^\circ + \theta) = \sin \theta$	
$\cos(180^\circ + \theta) = -\cos \theta$	$\cos(360^\circ + \theta) = \cos \theta$	
$\tan(180^\circ + \theta) = \tan \theta$	$\tan(360^\circ + \theta) = \tan \theta$	

1. Simplify the following expressions.

(a) $\sin(90^\circ - \theta) + \cos(360^\circ - \theta)$

= _____ + $\cos()$

=

$\sin(90^\circ - \theta) = \cos \underline{\hspace{1cm}}$

(b) $\cos(180^\circ - \theta) \tan(360^\circ + \theta)$

= $() \tan()$

=

$\tan \theta = \underline{\hspace{1cm}}$

(c) $\frac{\sin(180^\circ - \theta)}{\cos(-\theta)}$

= $\frac{\sin()}{()}$

=

(d) $\frac{\sin(180^\circ + \theta)}{\cos(360^\circ + \theta)}$

= $\frac{()}{()}$

=

2. Simplify the following expressions.

(a) $\frac{\sin(360^\circ - \theta)}{\sin(-\theta)}$

(b) $\tan(180^\circ - \theta) \cos(180^\circ + \theta)$

(c) $\tan(90^\circ - \theta) \sin(180^\circ - \theta)$

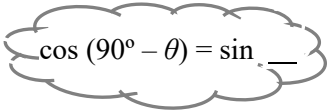
$\tan(90^\circ - \theta)$
= $\frac{1}{\tan()}$

(d) $1 - \cos(360^\circ + \theta) \cos(-\theta)$

$\sin^2 \theta + \cos^2 \theta = \underline{\hspace{1cm}}$

3. Simplify the following expressions.

(a) $\frac{\tan(180^\circ + \theta)}{\cos(90^\circ - \theta)}$



(b) $\frac{\sin(360^\circ + \theta)}{\cos(180^\circ + \theta) \tan(-\theta)}$

4. Simplify the following expressions.

(a) $\sin(90^\circ + \theta) \tan \theta$
=
=
=

(b) $\sin \theta - \cos(90^\circ + \theta)$
=
=

5. Simplify $\frac{\cos(90^\circ + \theta)}{\tan(360^\circ - \theta)}$.

→Exercise 6.3: 9 – 18

Try More

6. Simplify $\tan(90^\circ - \theta) \sin(90^\circ + \theta) - \sin(180^\circ + \theta)$.