

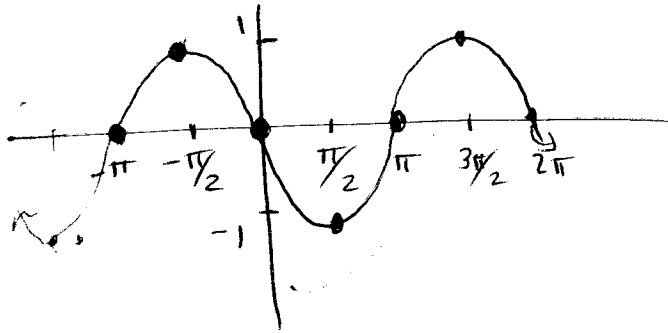
Example 5

Graph $y = \sin(x + \pi)$. Name the domain, range, amplitude, and period. Describe the transformations applied to the parent graph.

Subtract π from x 's shift to left π

phase shift = $-\frac{c}{b} = -\frac{\pi}{1} = -\pi$

$-\pi$	0
$-\pi/2$	1
0	0
$\pi/2$	-1
π	0



D: $(-\infty, \infty)$
 R: $[-1, 1]$
 amp = 1
 per = 2π

Example 6

Graph $y = \frac{1}{2} \sin(x + \pi) + 2$. Name the domain, range, amplitude, and period. Describe the transformations applied to the parent graph.

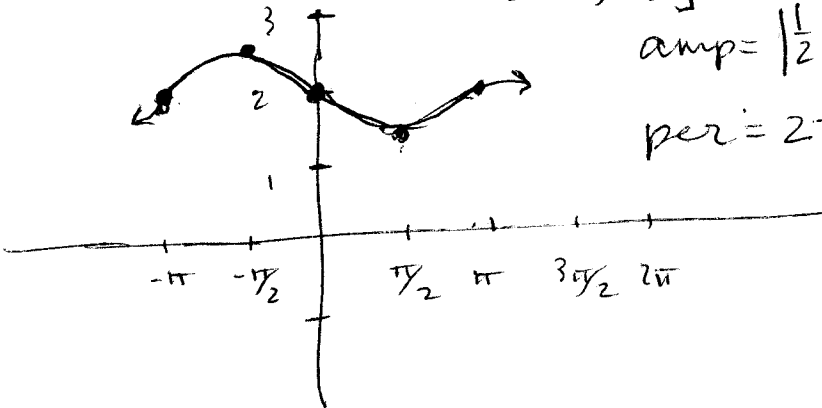
D: $(-\infty, \infty)$

R: $[3/2, 5/2]$

horiz. shift left π
 vert. shrink $\times \frac{1}{2}$
 vert. shift up 2

amp = $|\frac{1}{2}| = \frac{1}{2}$

per = 2π

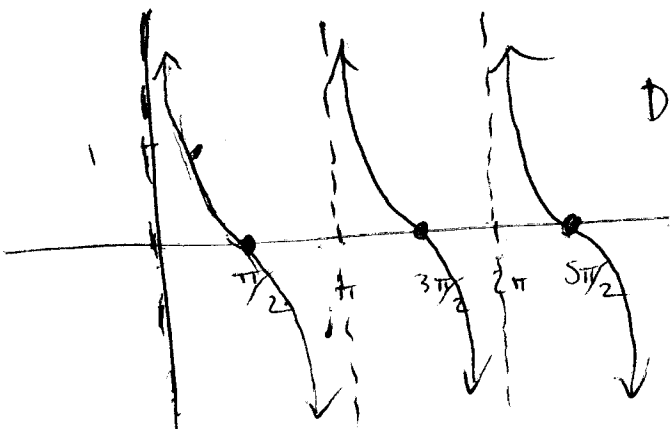


$-\pi$	2
$-\pi/2$	$2\frac{1}{2}$
0	2
$\pi/2$	$1\frac{1}{2}$
π	2

Example 7

Graph $y = -\tan(x - \frac{\pi}{2})$. Name the domain, range, and period. Describe the transformations applied to the parent graph.

shift right $\pi/2$
 refl. over x-axis



D: $x \neq \pi/2 + k\pi$

K is an integer

R: $(-\infty, \infty)$

per = π

$\pi/2$	0
π	undef
$3\pi/2$	0
2π	undef
$5\pi/2$	0

Notes and Worksheet #7 Writing Sine and Cosine Equations From Graphs

ODPS

Give the amplitude, period, and an equation for each graph.

1) $y = A \sin Bx$
 amp = 3
 not refl.
 $A = 3$

per = $\frac{2\pi}{B}$
 $\pi = \frac{2\pi}{B}$
 $B = 2$

$y = 3 \sin 2x$

2) $y = A \cos Bx$
 amp = 2
 reflected
 $A = -2$
 per = 8

$\theta = \frac{2\pi}{B}$
 $8\theta = 2\pi$
 $B = \frac{2\pi}{8} = \frac{\pi}{4}$

$y = -2 \cos \frac{\pi}{4}x$

3)

4) $y = A \cos Bx$
 amp = 2
 not refl.
 $A = 2$
 per = 24π

$\frac{24\pi}{B} = \frac{2\pi}{B}$
 $24\pi B = 2\pi$
 $B = \frac{2\pi}{24\pi} = \frac{1}{12}$

$y = 2 \cos \frac{1}{12}x$

5)

6)

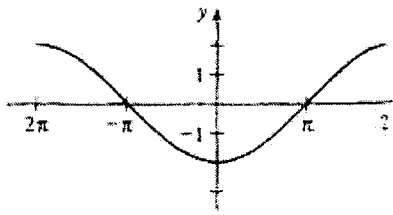
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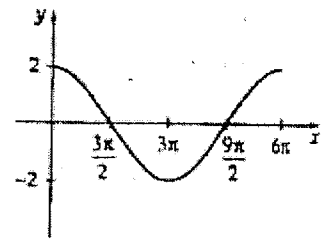
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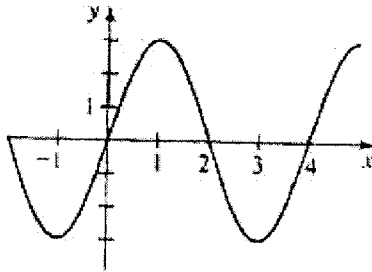
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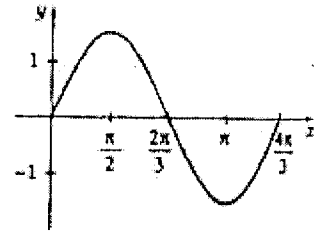
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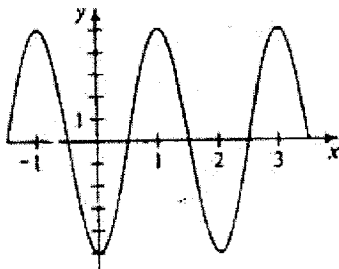
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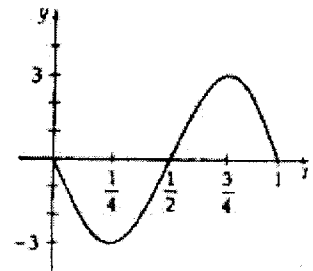
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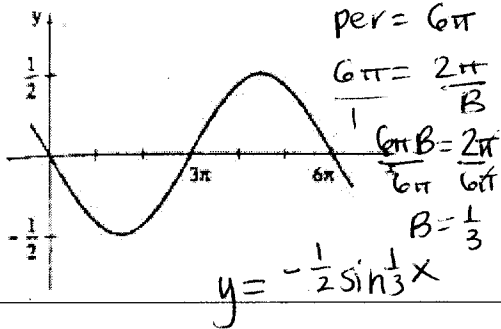


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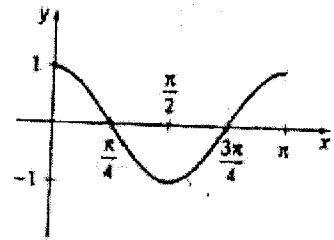


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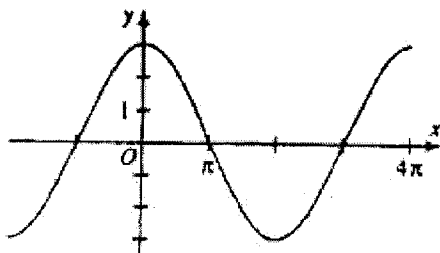
$y = A \sin Bx$
 amp = $\frac{1}{2}$
 refl. $A = -\frac{1}{2}$



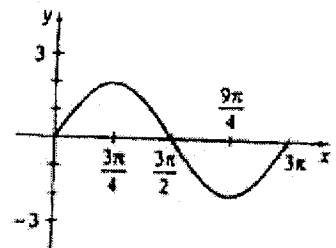
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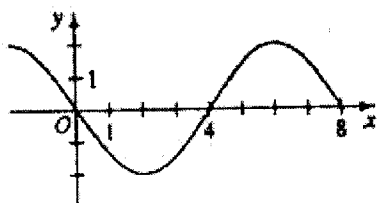
19)



20)



21)



22)

