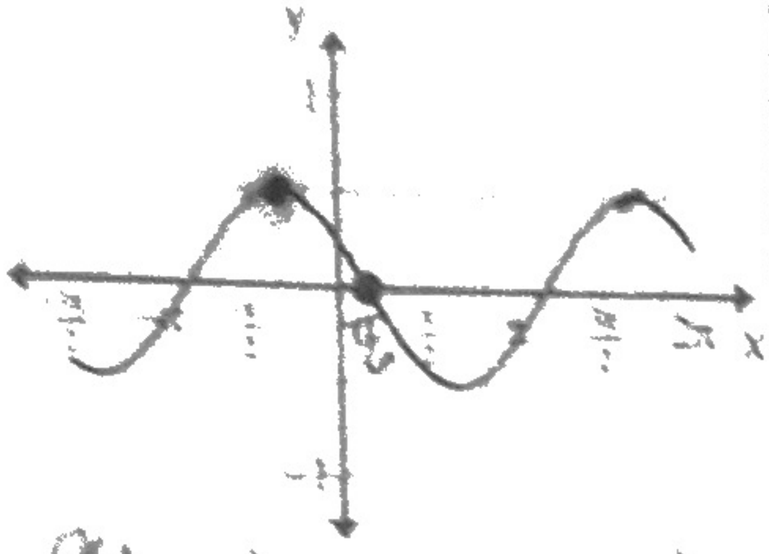
Pre-Calculus Worksheet
Transformations of Sine and Cosine #2B

Name: Key

Period: ____

Write the equation for each graph as a transformation of **cosine**.

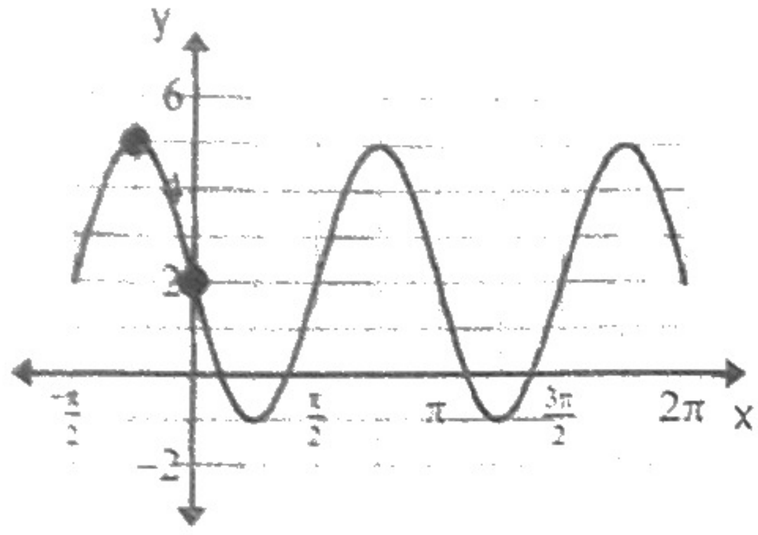
1.



Flip no
Period: 2π
b: 1
Phase shift $\frac{\pi}{3}$ L
Vertical Shift 0
Amplitude $\frac{1}{2}$

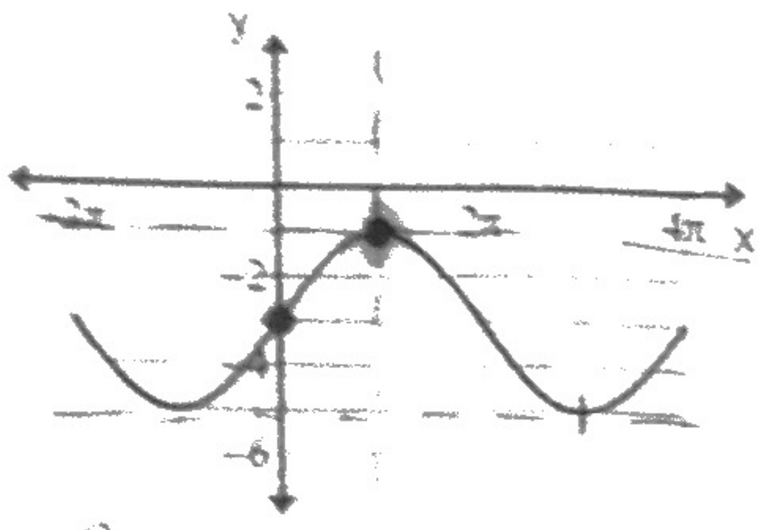
$f(\theta) = \frac{1}{2}\cos(\theta + \frac{\pi}{3})$

2.



Flip _____
Period: _____;
b= _____
Phase shift _____
Vertical Shift ____
Amplitude _____

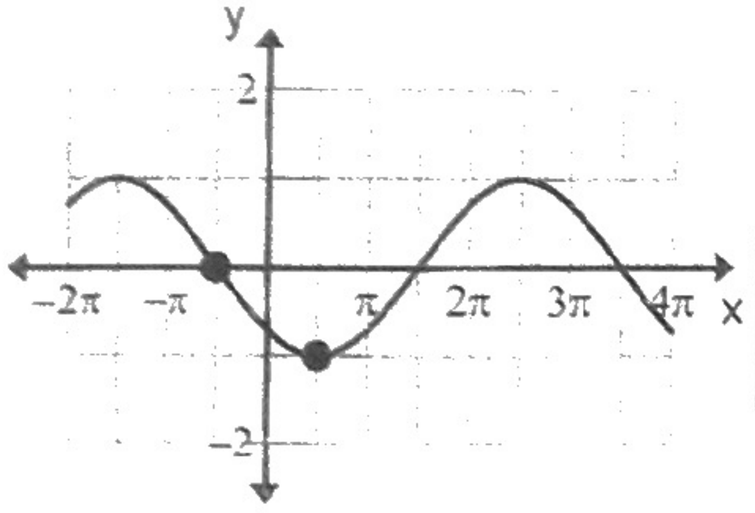
3.



Flip no
Period: 2π;
b= 1
Phase shift π R
Vertical Shift -3
Amplitude 2

$f(\theta) = 2\cos(\theta - \pi) - 3$

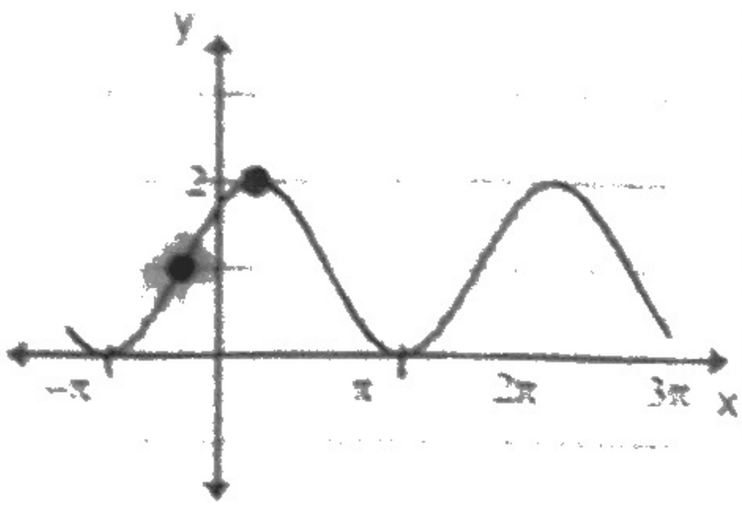
4.



Flip _____
Period: _____;
b= _____
Phase shift _____
Vertical Shift ____
Amplitude _____

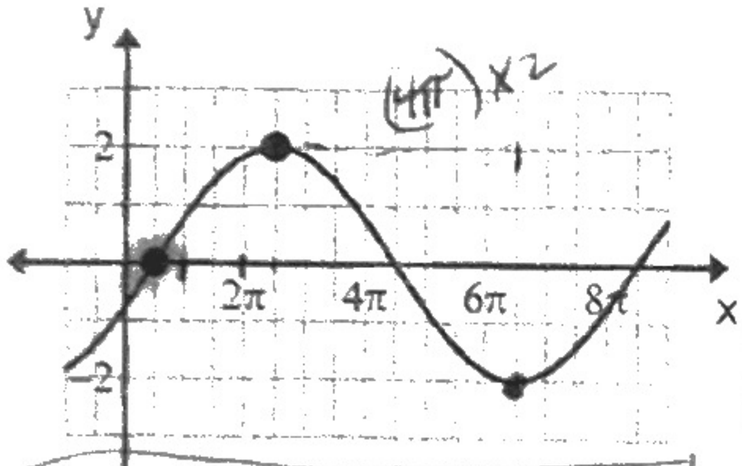
Write the equation for each graph as a transformation of **sine**.

5.



Flip no
Period: _____;
b= _____
Phase shift _____
Vertical Shift ____
Amplitude _____

6.

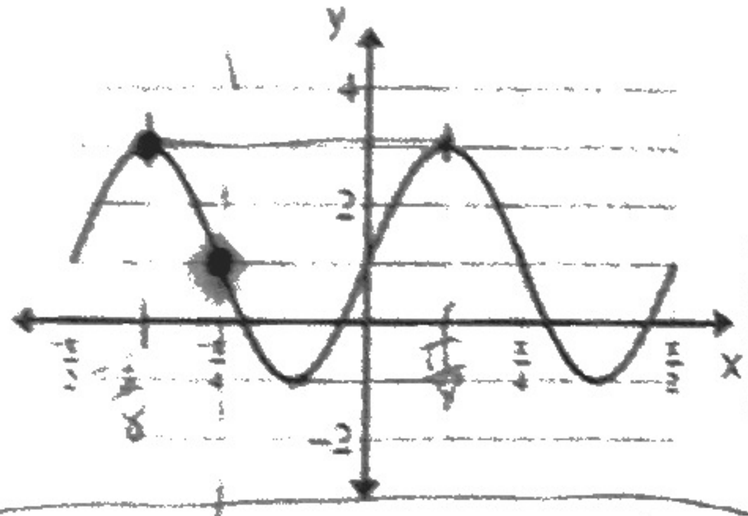


Flip no
Period: 8π;
b= $\frac{1}{4}$
Phase shift $\frac{\pi}{2}$ R
Vertical Shift 0
Amplitude 2

$f(x) = 2\sin\frac{1}{4}(\theta - \frac{\pi}{2})$

$8\pi = \frac{2\pi}{b}$
$8\pi b = 2\pi$
$b = \frac{1}{4}$

7.



Flip yes
Period: $\frac{1}{2}\pi$
b= 4
Phase shift $\frac{\pi}{4}$ L
Vertical Shift 1
Amplitude 2

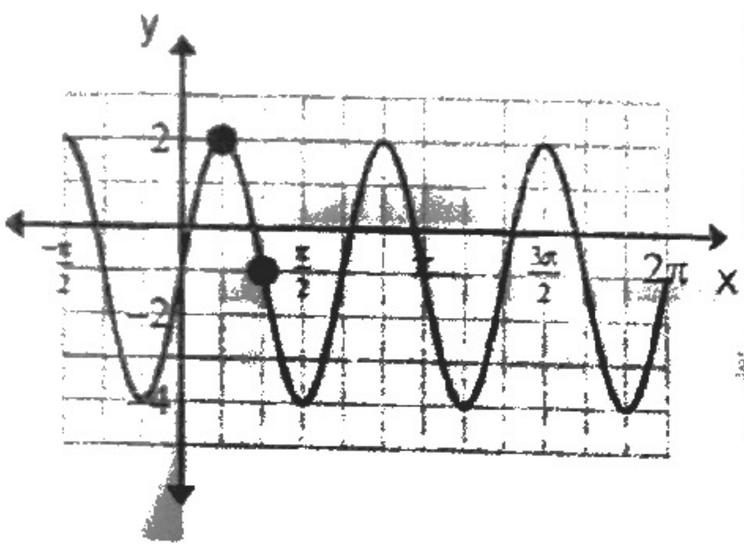
$f(x) = -2\sin 4(\theta + \frac{\pi}{4}) + 1$

~~$\frac{1}{2}\pi = \frac{2\pi}{b}$~~

$\frac{1}{2}\pi(b) = 2\pi$

$b = 4$

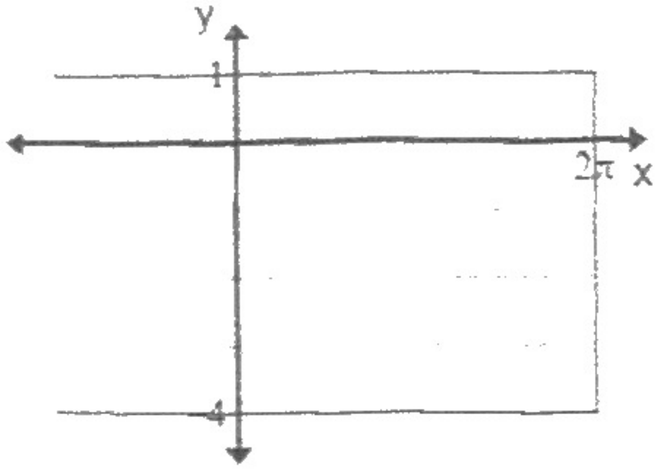
8.



Flip _____
Period: _____;
b= _____
Phase shift _____
Vertical Shift ____
Amplitude _____

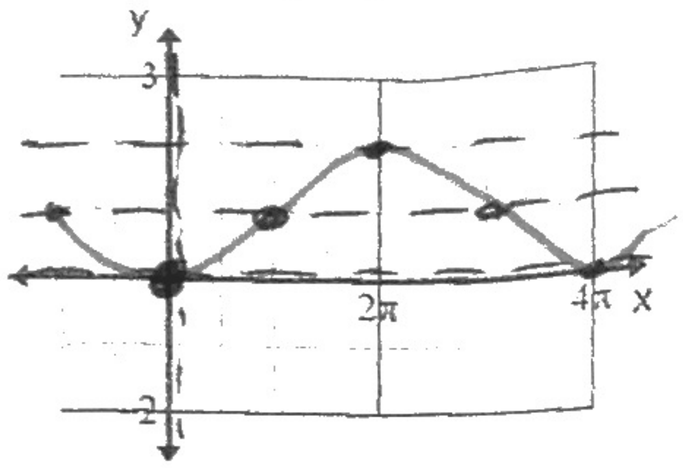
pGraph each of the following sine or cosine transformations over ONE PERIOD.

9. $y = \sin\left(x + \frac{\pi}{2}\right) - 2$



Flip _____
Period:_____;
b=_____
Phase shift____
Vertical Shift ___
Amplitude_____

10. $y = -\cos\left(\frac{1}{2}x\right) + 1$

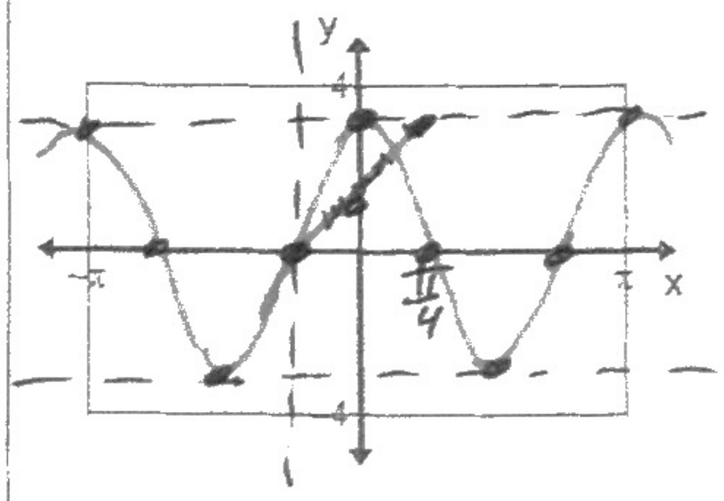


Flip yes
Period: 4π
b= $\frac{1}{2}$
Phase shift 0
Vertical Shift 1
Amplitude 1

$p = \frac{2\pi}{\frac{1}{2}}$

$p = 4\pi$

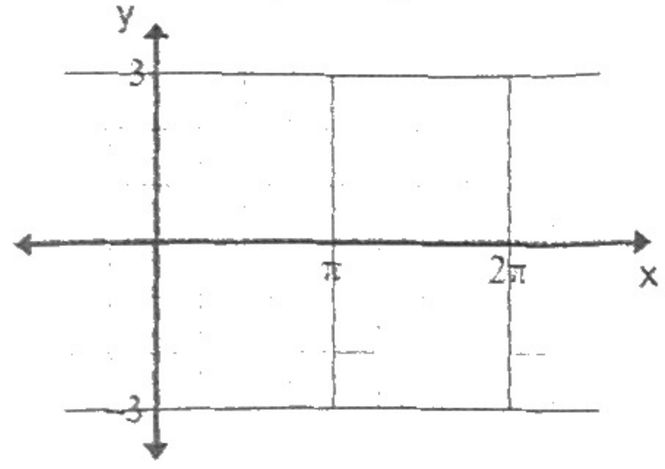
11. $y = 3\sin\left(2\left(x + \frac{\pi}{4}\right)\right)$



Flip no
Period: π;
b= 2
Phase shift L $\frac{\pi}{4}$
Vertical Shift 0
Amplitude 3

CV: $\frac{\pi}{4}$

12. $y = 2\cos\left(x - \frac{\pi}{4}\right)$

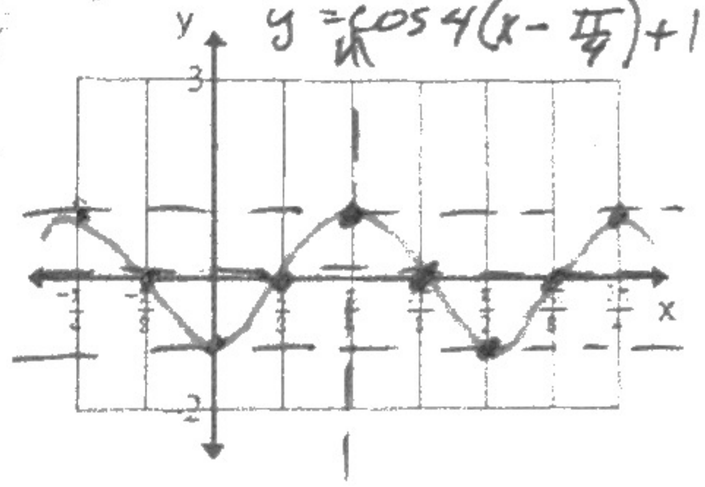


Flip _____
Period:_____;
b=_____
Phase shift____
Vertical Shift ___
Amplitude_____

Must Factor 1st

13. $y = \cos(4x - \pi) + 1$

$y = \cos 4\left(x - \frac{\pi}{4}\right) + 1$



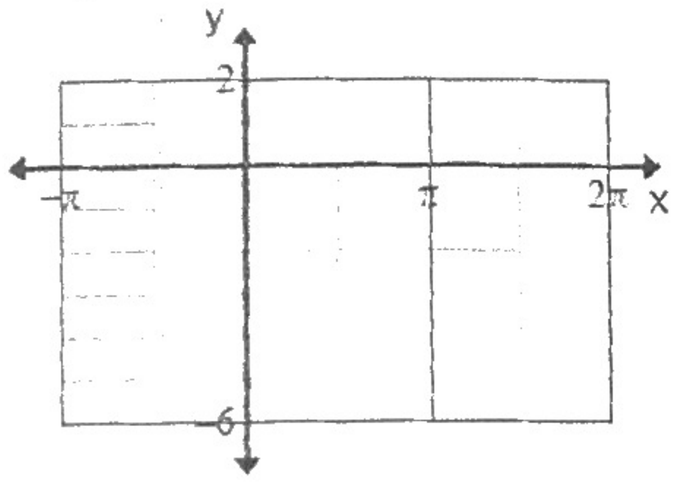
Flip no
Period: $\frac{\pi}{2}$;
b= 4
Phase shift Rt $\frac{\pi}{4}$
Vertical Shift 1
Amplitude 1

$p = \frac{2\pi}{4}$

$p = \frac{\pi}{2}$

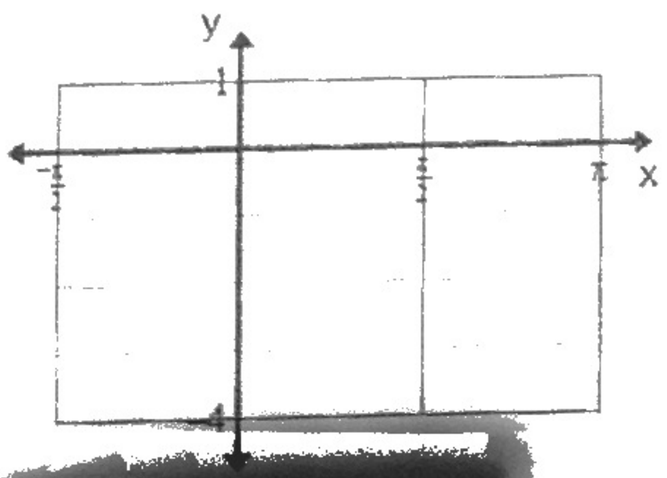
CV: $\frac{\frac{\pi}{2}}{4} = \frac{\pi}{8}$

14. $y = -3\sin x - 2$



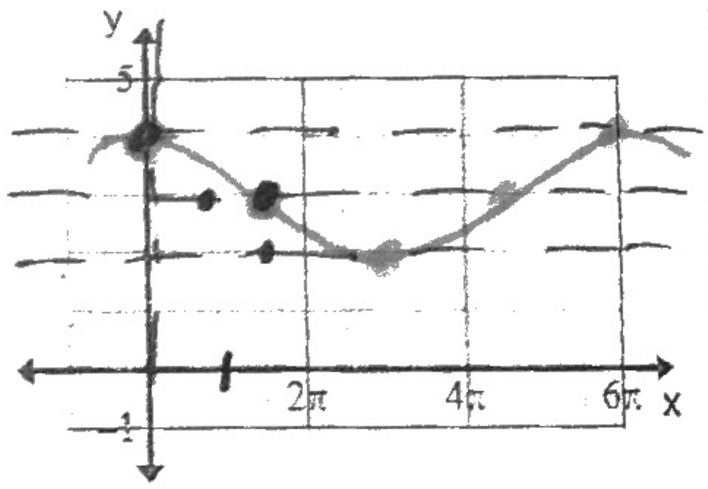
Flip _____
Period:_____;
b=_____
Phase shift____
Vertical Shift ___
Amplitude_____

15. $y = -\sin\left(3\left(x + \frac{\pi}{6}\right)\right) - 2$



Flip _____
Period:_____;
b=_____
Phase shift____
Vertical Shift ___
Amplitude_____

16. $y = \cos\left(\frac{1}{3}x\right) + 3$



Flip no
Period: 6π
b= $\frac{1}{3}$
Phase shift 0
Vertical Shift 3
Amplitude 1

$p = \frac{2\pi}{\frac{1}{3}}$

$p = 6\pi$

CV: $\frac{6\pi}{4} = 1.5\pi$