10.2

SM3 Graphing Sine and Cosine with Period & Phase Shift

2023-2024

SCORE: /

Name _____ **Date** _____ **Period** _____

Answer the following about each equation.

1. $f(\theta) = 6\sin 4\left(\theta - \frac{\pi}{2}\right) - 3$

$a =$_____

$b =$_____

$c =$_____

$d =$_____

2. $f(\theta) = 10 - 3\cos\pi(\theta)$

$a =$_____

$b =$_____

$c =$_____

$d =$_____

Write the phase shift (c value), b value, period and frequency of the following without using a calculator.

3. $f(\theta) = \sin\left(\theta + \frac{\pi}{2}\right)$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

4. $f(\theta) = \cos 2\theta$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

5. $f(\theta) = \sin\frac{\theta}{3}$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

6. $f(\theta) = \cos 2(\theta - \pi)$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

7. $f(\theta) = \frac{1}{4}\sin 6\,\theta$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

8. $f(\theta) = 8\cos\frac{\theta}{4}$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

9. $f(\theta) = -3\cos 2(\theta - 4\pi)$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

10. $f(\theta) = \sin\theta$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

11. $f(\theta) = 8\cos\theta - \pi$

phase shift (c)=_____

$b =$_____

period=_____

frequency=_____

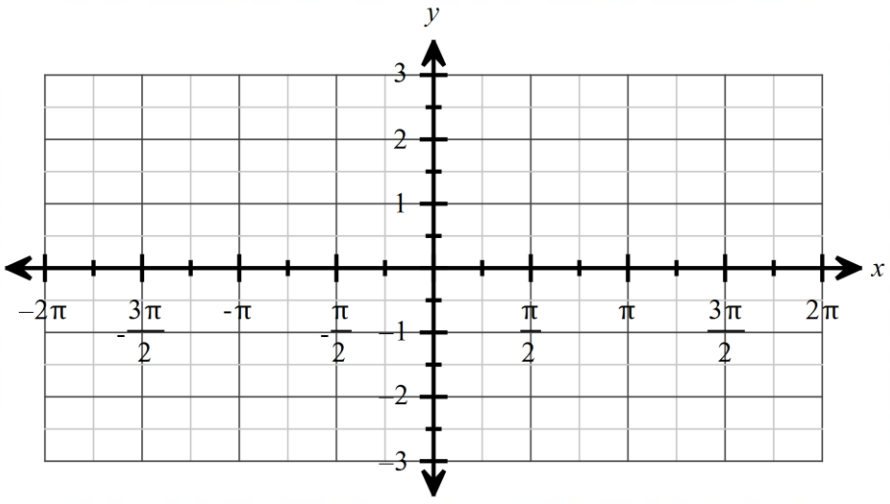
Find the phase shift (c) and period $\left(\frac{2\pi}{b}\right)$. Then graph at least 1 period without a calculator, label 5 key points.

12. $f(\theta) = \cos\left(\theta - \frac{\pi}{2}\right)$

phase shift _____

period_____

θ					
$y = \cos\theta$					

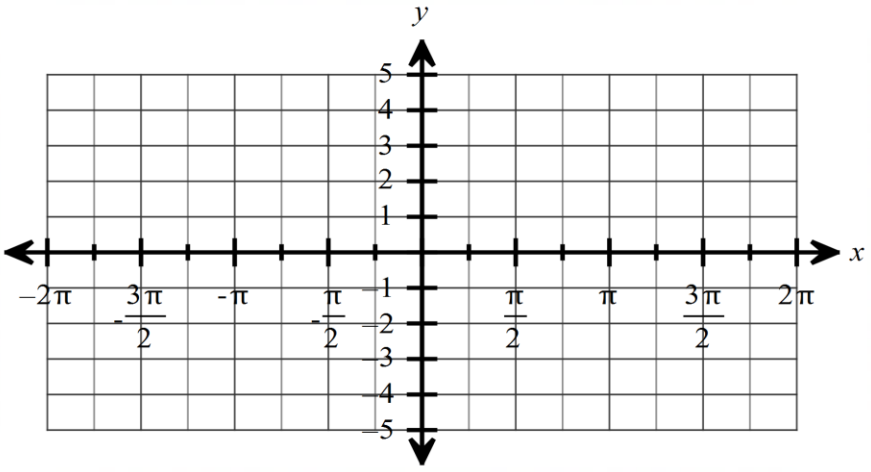


13. $f(\theta) = \sin\left(\theta + \frac{3\pi}{2}\right)$

phase shift _____

period_____

θ					
$y = \sin\theta$					

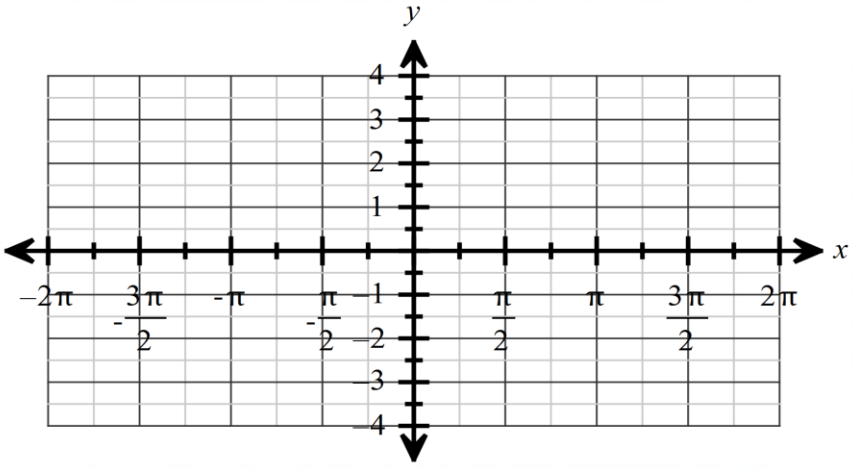


14. $f(\theta) = \sin(4\theta)$

phase shift _____

period_____

θ					
$y = \sin\theta$					

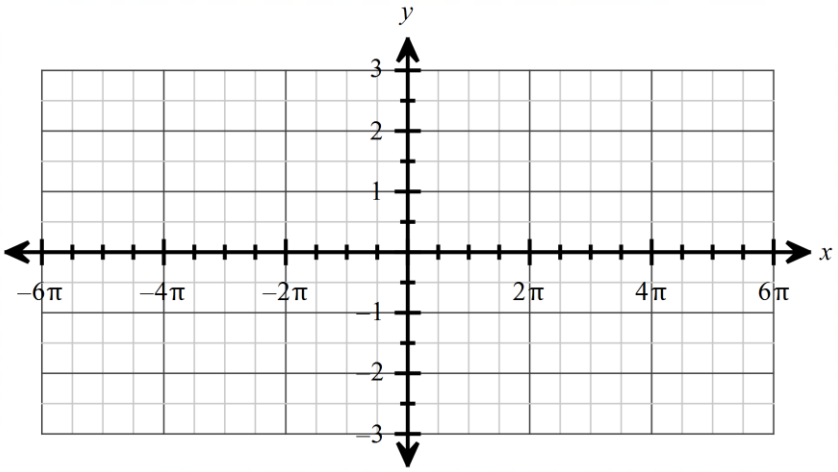


15. $f(\theta) = -\cos\frac{\theta}{3}$

phase shift _____

period_____

θ					
$y = \cos\theta$					

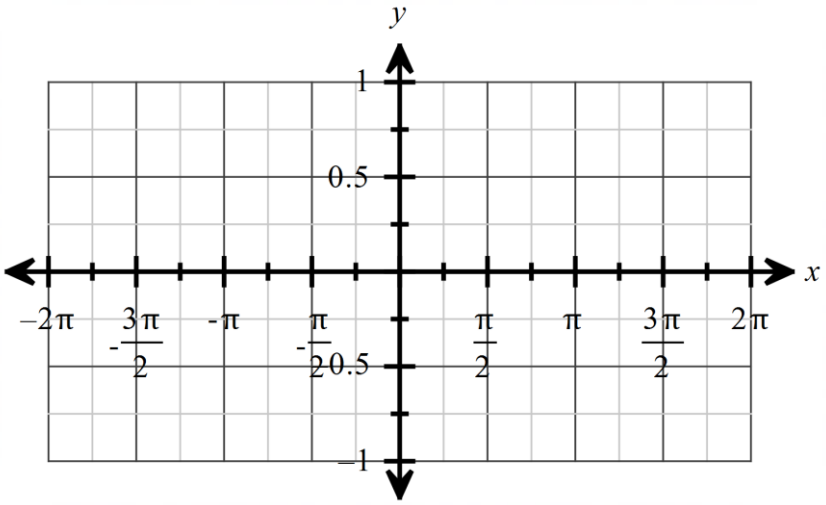


16. $f(\theta) = -\cos 2(\theta - \pi)$

phase shift _____

period_____

θ					
$y = \cos\theta$					

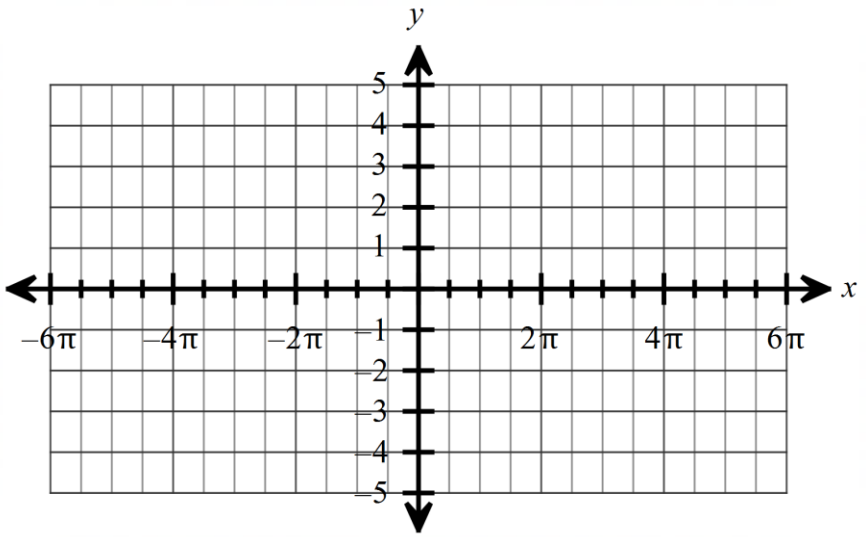


17. $f(\theta) = \cos\frac{1}{2}\left(\theta - \frac{\pi}{4}\right)$

phase shift _____

period_____

θ					
$y = \cos\theta$					

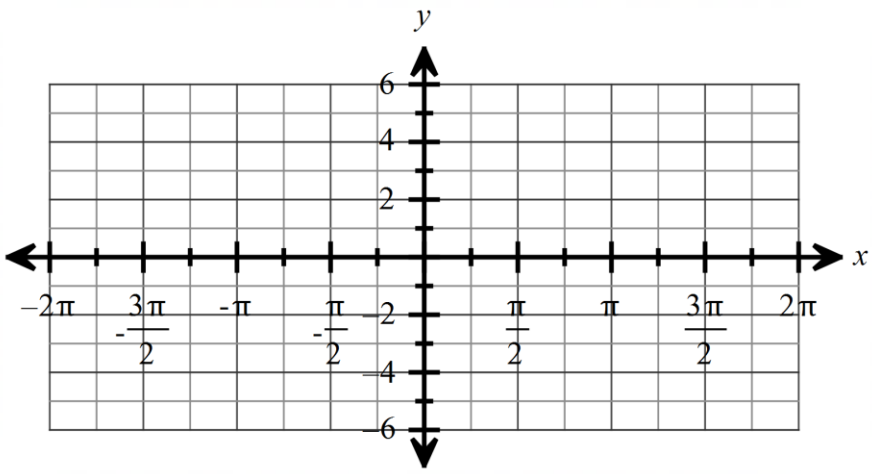


18. $f(\theta) = -\sin\left(\theta - \frac{\pi}{4}\right)$

phase shift _____

period_____

θ					
$y = \sin\theta$					



Write an equation for the <u>sine</u> curve that has the given period and phase shift.

19. phase shift 3, period π

20. phase shift $\frac{\pi}{2}$, period $\frac{\pi}{2}$

21. phase shift 0, period 2π

22. phase shift π, period $\frac{\pi}{3}$