

Practice 13-5

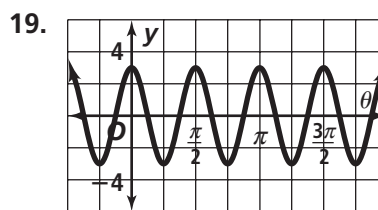
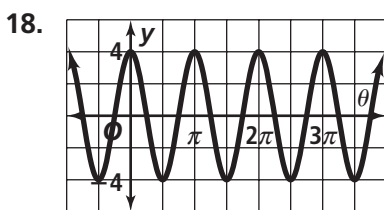
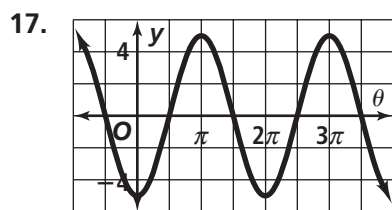
The Cosine Function

Sketch the graph of each function in the interval from 0 to 2π .

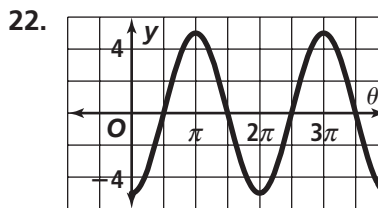
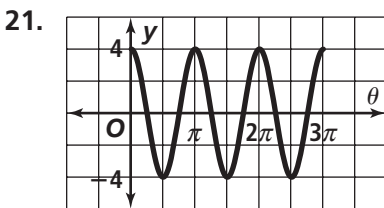
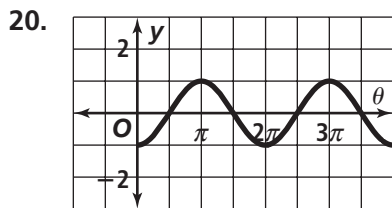
1. $y = \cos \theta$
2. $y = 2 \cos \pi\theta$
3. $y = 5 \cos \theta$
4. $y = -\cos \theta$
5. $y = -5 \cos \theta$
6. $y = \cos 2\pi\theta$
7. $y = -2 \cos 2\theta$
8. $y = 3 \cos 4\theta$
9. $y = \cos \frac{\theta}{2}$
10. $y = 3 \cos 8\theta$
11. $y = -4 \cos \pi\theta$
12. $y = 0.5 \cos \pi\theta$
13. $y = -\cos 2\theta$
14. $y = -3 \cos \frac{\pi}{2}\theta$
15. $y = 4 \cos \pi\theta$

16. Suppose 12 in. waves occur every 5 s. Write an equation using a cosine function that models the height of a water particle as it moves from crest to crest.

Write an equation of a cosine function for each graph.



Find the period and amplitude of each cosine function. Identify where the maximum value(s), minimum value(s), and zeros occur in the interval from 0 to 2π .



Solve each equation in the interval from 0 to 2π . Round to the nearest hundredth.

23. $2 \cos 3\theta = 1.5$
24. $\cot \frac{t}{3} = 1$
25. $1.5 \cos \pi\theta = -1.5$
26. $3 \cos \frac{\pi}{5}\theta = 2$
27. $3 \cos t = 2$
28. $0.5 \cos \frac{\theta}{2} = 0.5$
29. $4 \cos \frac{\pi}{4}\theta = -2$
30. $3 \cos \frac{\theta}{4} = 1.5$
31. $3 \cos \theta = -3$

Write a cosine function for each description. Assume that $a > 0$.

32. amplitude = 2π , period = 1
33. amplitude = $\frac{1}{2}$, period = π