Secondary Math 3   Name_____

10.2 The Cosine Function

Date_____ Period_____
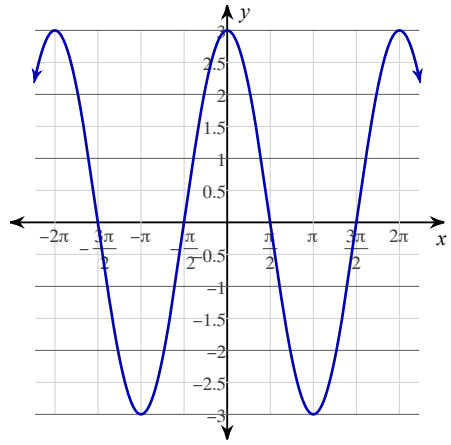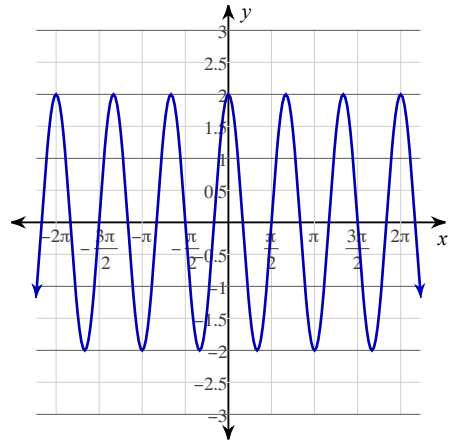
Find the frequency, period and amplitude of each cosine function.

1)

2)

Write a cosine function for each description. Assume that a > 0.
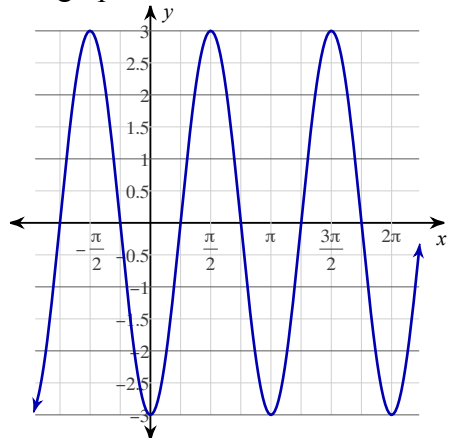
3) amplitude 3 period 2π

4) amplitude 1.5 period π
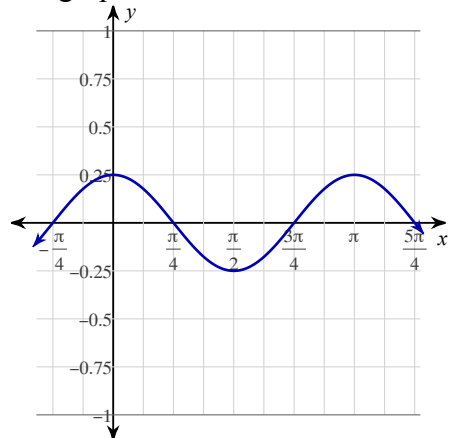
5) amplitude 5 and period $\dfrac{\pi}{4}$.

6) amplitude $\dfrac{1}{3}$ and period $\dfrac{\pi}{3}$.

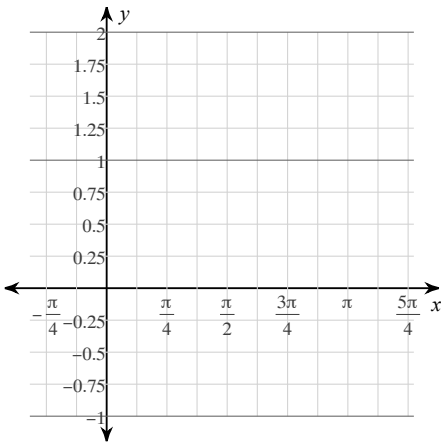7) Write an equation of a cosine function for the graph shown.

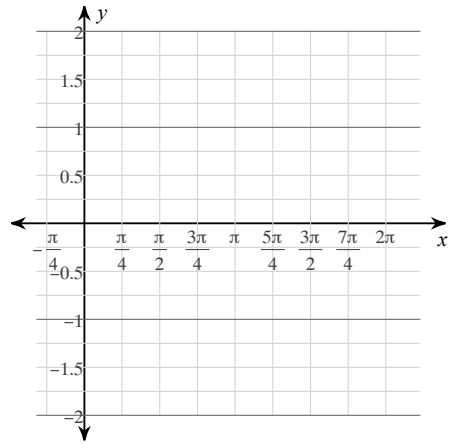8) Write an equation of a cosine function for the graph shown.

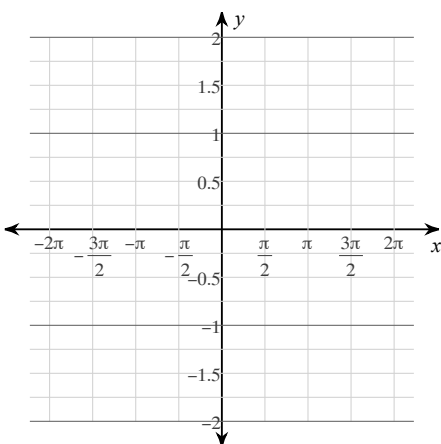**Sketch one cycle of the graph of each cosine function.**
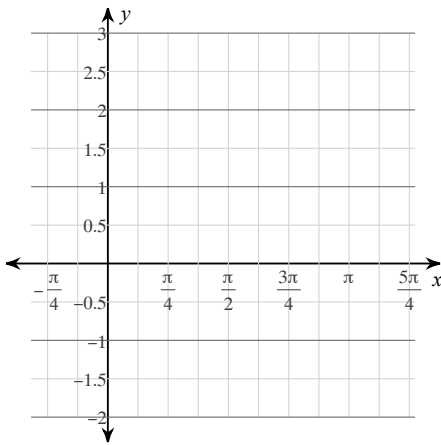
9) $y = \cos 2x$

10) $y = 2\cos \dfrac{1}{2}x$

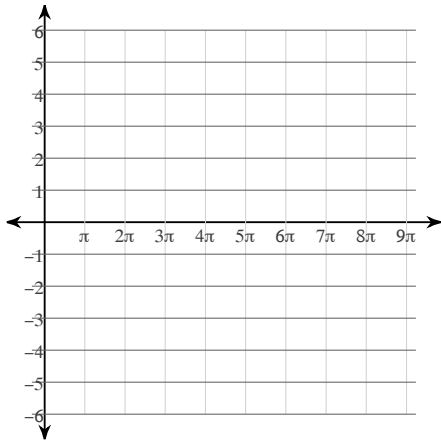

11) $y = -\cos x$

12) $y = \dfrac{3}{2}\cos 4x$

Assume x is in the interval from 0 to 2π.

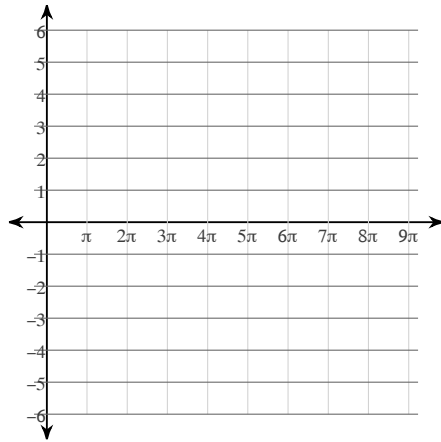13) For what values of x is y positive for $y = \cos x$?

14) For what values of x is y positive for $y = -\cos x$?

Graph each function using radians. Then, using both sine and cosine, write two other equations to describe the function.
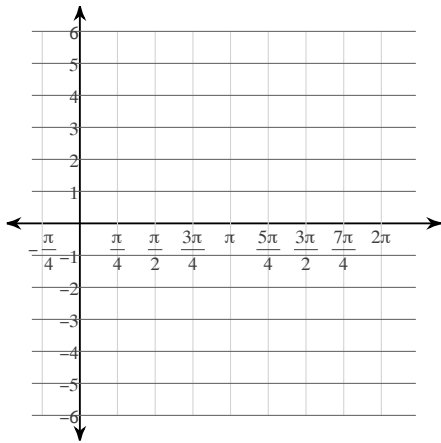
15) $y = 3\cos \dfrac{\theta}{3}$

16) $y = 2\sin \dfrac{\theta}{3}$

17) $y = 3\sin 2\theta$

18) $y = 4\cos \theta$