Find each sum as a fraction in reduced form.

1. $\frac{2}{3} + 2 =$ $\frac{8}{3}$

2. $-\frac{5}{6} + 4 =$ $\frac{19}{6}$

3. $-\frac{1}{4} + 6 =$ $\frac{23}{4}$

4. $-\frac{4}{3} + \frac{2}{7} =$ $\frac{-22}{21}$

5. $\frac{3}{8} + \frac{5}{6} =$ $\frac{29}{24}$

6. $-\frac{7}{4} + \frac{2}{9} =$ $\frac{-55}{36}$

Find the average of each pair of fractions. Give your answer as a fraction in reduced form.

7. $\frac{3}{4}$ and $\frac{5}{6}$

$\frac{3}{4} + \frac{5}{6} = \frac{9}{12} + \frac{10}{12} = \frac{19}{12} \cdot \frac{1}{2} = \frac{19}{24}$

8. $-\frac{2}{3}$ and $-\frac{8}{9}$

$-\frac{6}{9} + \frac{-8}{9} = \frac{-14}{9} \cdot \frac{1}{2}$

$= \frac{-7}{9}$

9. $-\frac{5}{14}$ and $\frac{11}{14}$

$-\frac{5}{14} + \frac{11}{14} = \frac{6}{14} \cdot \frac{1}{2} = \frac{3}{14}$

$y = a \text{ Sin/Cos } b(x - h) + k$

a = Amplitude (vertical stretch or shrink)

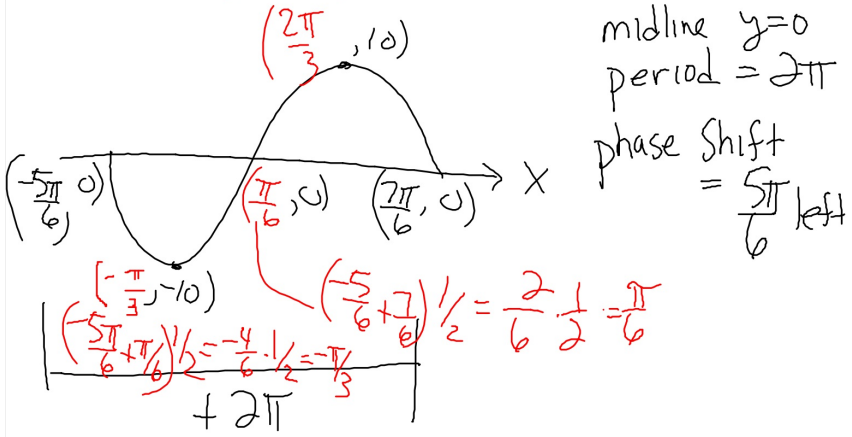
b: Period $= \frac{2\pi}{b}$

h = Phase shift (horizontal translation)

k = midline (vertical translation)

Example: Graph one period of this function

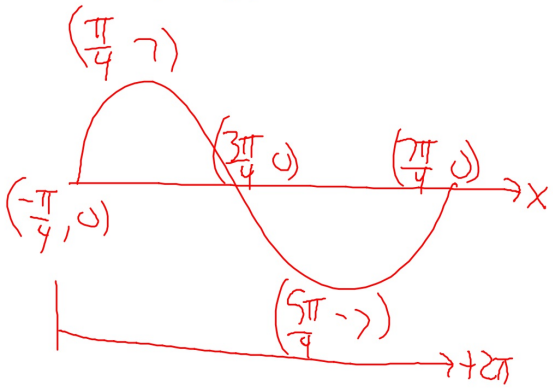
$y = -10\sin\left(x + \frac{5\pi}{6}\right)$



Amp = 10
midline y=0
period = 2π
phase shift = $\frac{5\pi}{6}$ left

1. Graph one period of the following function. Label the coordinates of all max, min, and zeros.

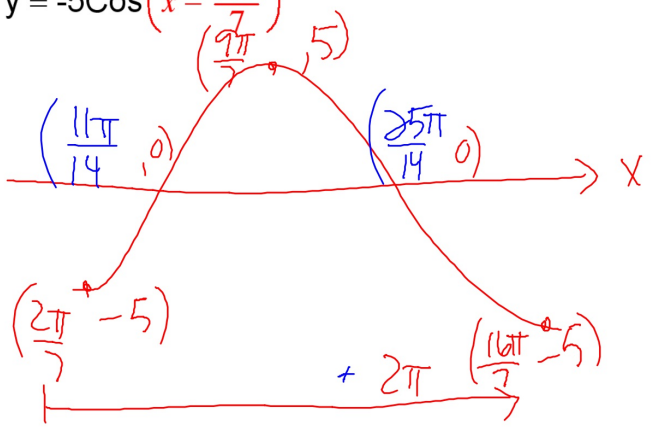
$y = 7\sin\left(x + \frac{\pi}{4}\right)$



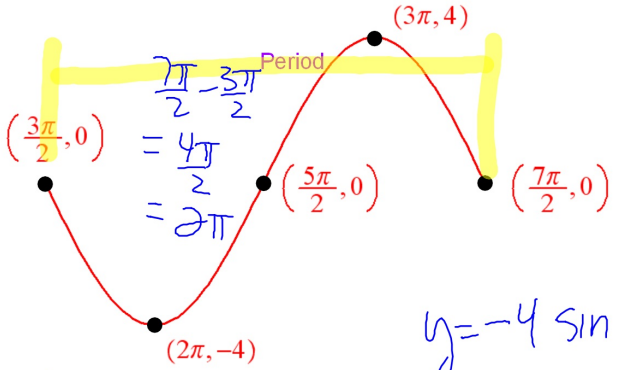
Amp=7
midline y=0
period: 2π
phase shift
left $\frac{\pi}{4}$

2. Graph one period of the following function. Label the coordinates of all max, min, and zeros.

$y = -5\cos\left(x - \frac{2\pi}{7}\right)$



3. Write the equation of this Sine function.

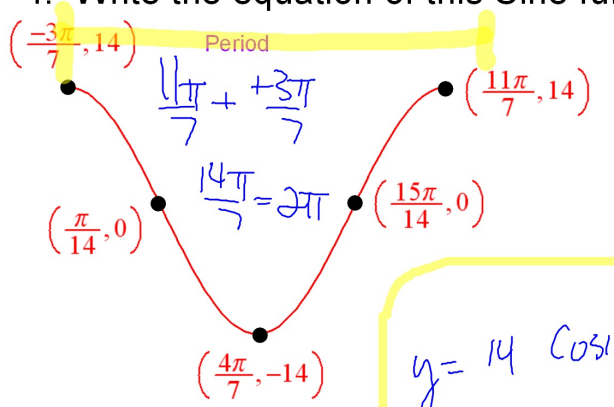


midline y=0
amp = 4
phase shift
$\frac{3\pi}{2}$ right

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

$b = 2\pi/\text{period} = 2\pi/2\pi = 1$

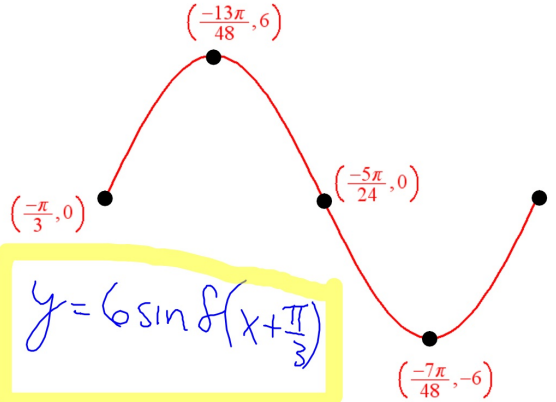
4. Write the equation of this Sine function.



Amp = 14
midline 0

$y = 14 \cos\left(x + \frac{3\pi}{7}\right)$

5. Write the equation of this Sine function.



$y = 6 \sin 8\left(x + \frac{\pi}{3}\right)$

period

$-\frac{1}{12} + +\frac{1}{3}$

$-\frac{1}{12} + \frac{4}{12}$

$\frac{3}{12} = \frac{\pi}{4}$

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

$= 8$