

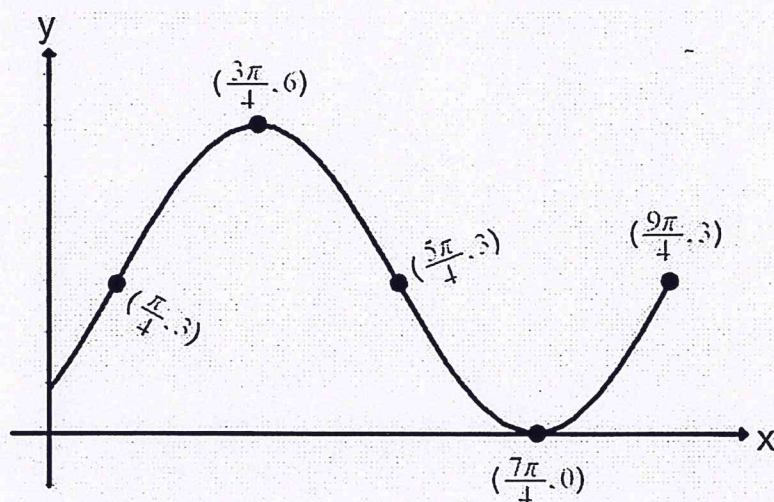
1. Find the equations of the Vertical Asymptotes and the x-intercepts of the following rational equation:

$$y = \frac{x^2 - 25}{x^2 - x - 6}$$

VA:

x-int:

2. Write a Sine and a Cosine equation for this graph.



3. Graph one period of this function. Label the coordinates of all Maximums, Minimums, and pts on the midline. $y = -8\cos\left(\frac{1}{2}\left(x - \frac{5\pi}{6}\right)\right) + 1$

1. Find the the equations of the Vertical Asymptotes and the x-intercepts of the following rational equation:

$$y = \frac{x^2 - 25}{x^2 - x - 6}$$

$$= \frac{(x+5)(x-5)}{(x-3)(x+2)}$$

VA:

$$x = -2, 3$$

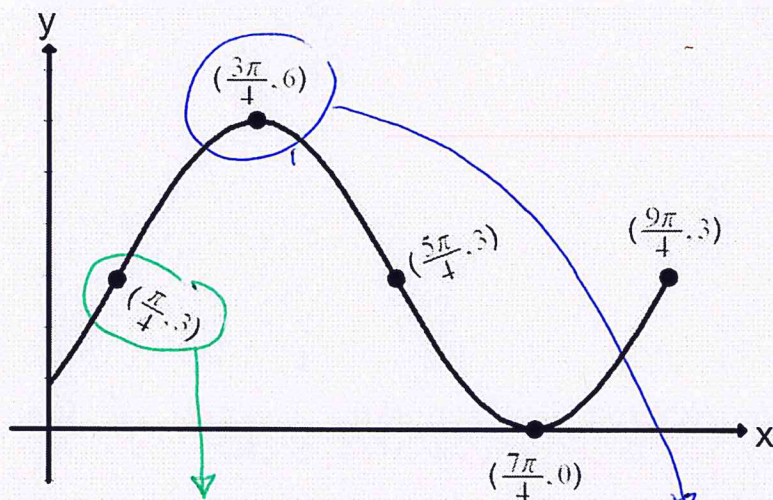
zeros of
the
denominator

x-int:

$$x = \pm 5$$

zeros of the
numerator

2. Write a Sine and a Cosine equation for this graph.



MIDLINE: $y = 3$

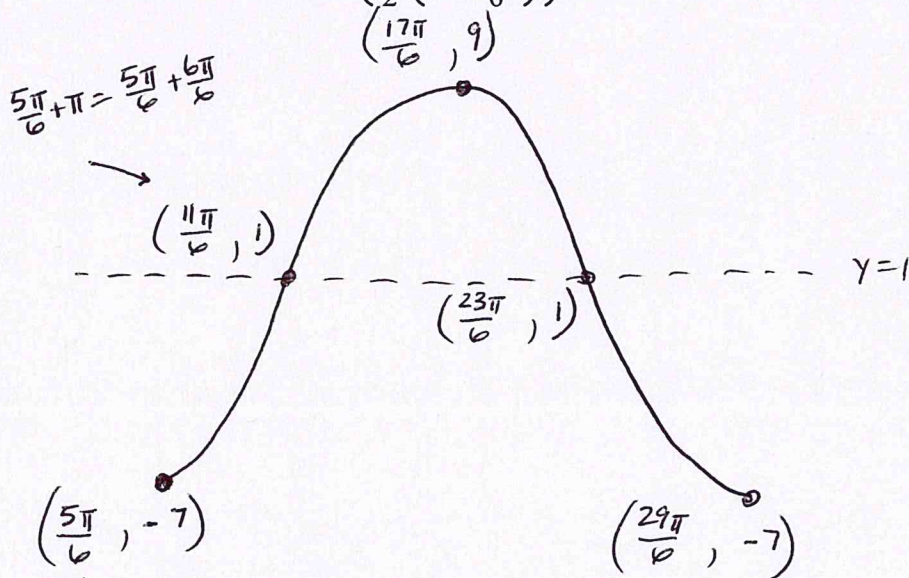
Amplitude = 3

period $\frac{9\pi}{4} - \frac{\pi}{4} = \frac{8\pi}{4} = 2\pi$
 $b = 1$

Sin: $y = 3 \sin(x - \pi/4) + 3$

Cos: $y = 3 \cos(x - \frac{3\pi}{4}) + 3$

3. Graph one period of this function. Label the coordinates of all Maximums, Minimums, and pts on the midline. $y = -8\cos(\frac{1}{2}(x - \frac{5\pi}{6})) + 1$



• MIDLINE: $y = 1$

• Amplitude = 8

• upside down cos

• phase shift $\frac{5\pi}{6}$ RIGHT

• period $\frac{2\pi}{1/2} = 4\pi$

$\frac{1}{4}$ period = $\frac{1}{4}(4\pi) = \pi$