1. State the Period, Amplitude, and Equation of the Midline for this Cosine Function: $y = -6\cos\frac{11x}{8} + 2$
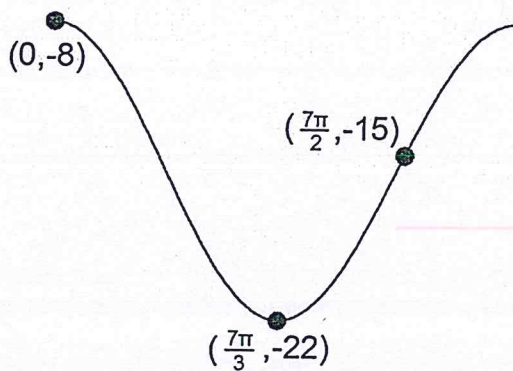
Period =   Amplitude =   Eq of Midline:

2. Graph one period of this Cosine function. Label the coordinates of all max, min, and points on the midline. $y = 14\cos\frac{2x}{9}$

3. Write the equation of this Cosine function:

(0,-8)

$(\frac{7\pi}{2},-15)$

$(\frac{7\pi}{3},-22)$

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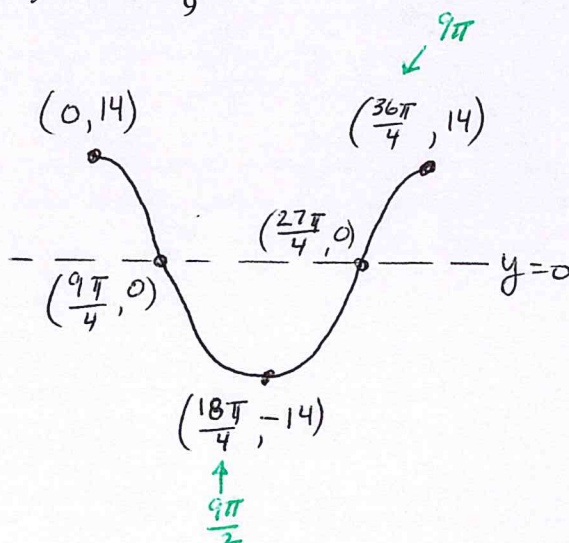1. State the Period, Amplitude, and Equation of the Midline for this Cosine Function: $y = -6\cos\frac{11x}{8} + 2$

Period = $\frac{2\pi}{b}$ Amplitude = 6 Eq of Midline: $y = 2$

$\frac{2\pi}{11/8} = 2\pi \cdot \frac{8}{11} = \frac{16\pi}{11}$

2. Graph one period of this Cosine function. Label the coordinates of all max, min, and points on the midline. $y = 14\cos\frac{2x}{9}$
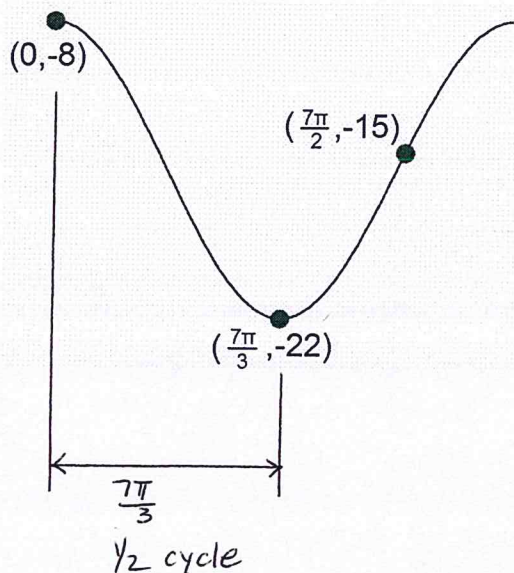

$(0, 14)$ 9π $\left(\frac{36\pi}{4}, 14\right)$

$\left(\frac{9\pi}{4}, 0\right)$ $\left(\frac{27\pi}{4}, 0\right)$ $y = 0$

$\left(\frac{18\pi}{4}, -14\right)$ $\frac{9\pi}{2}$

- period = $\frac{2\pi}{2/9} = 2\pi \cdot \frac{9}{2} = 9\pi$
- Amplitude = 14   Not upside down
- Midline: $y = 0$

¼ period: $\frac{1}{4} \cdot 9\pi = \frac{9\pi}{4}$

3. Write the equation of this Cosine function:

$(0, -8)$ $\left(\frac{7\pi}{2}, -15\right)$

$\left(\frac{7\pi}{3}, -22\right)$

$\frac{7\pi}{3}$

½ cycle

MIDLINE: $y = -15$ $\boxed{k = -15}$

Amplitude: $-8 - -15 = 7$

Not upside down

$\boxed{a = 7}$

period: $\dfrac{\frac{7\pi}{3}}{\frac{1}{2}} = \frac{7\pi}{3} \cdot \frac{2}{1} = \frac{14\pi}{3}$

$b = \dfrac{2\pi}{\frac{14\pi}{3}} = 2\pi \cdot \frac{3}{14\pi} = \boxed{\frac{3}{7}}$

$\boxed{y = 7\cos\frac{3x}{7} - 15}$

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