

12. **Meteorology** The mean average temperature in Buffalo, New York, is 47.5° . The temperature fluctuates 23.5° above and below the mean temperature. If $t = 1$ represents January, the phase shift of the sine function is 4.

$$P.S. = 4$$

$$V.S. = 47.5$$

$$Amp = 23.5$$

$$Per = 12$$

$$y = A \sin(Kt - c) + h$$

$$y = 23.5 \sin\left(\frac{\pi}{6}t - \frac{2\pi}{3}\right) + 47.5$$

$$c. Aug = 67.9^\circ$$

$$12 = \frac{2\pi}{K} \quad \left(\frac{\pi}{6}\right) 4 = \frac{C}{\cancel{\pi/6}} \cdot \frac{\pi}{6} \quad b. Mar = 35.8^\circ$$

$$K = \frac{\pi}{6}$$

$$\frac{4\pi}{6} = C$$

$$\frac{2\pi}{3} = C$$

$$|3, 15-19, 28$$