Name _____

1 What are the vertical shift and period of this sinusoidal function?

$$f(x) = \cos\left(\frac{3}{5}\pi x\right) + \frac{4}{3}$$

A	B	C
Period $= \dfrac{6}{4}$ Vertical Shift $= \dfrac{3}{5}$	Period $= \dfrac{10\pi}{3}$ Vertical Shift $= \dfrac{4}{3}$	Period $= \dfrac{10}{3}$ Vertical Shift $= \dfrac{4}{3}$

2 What are the phase shift and period of this sinusoidal function?

$$f(x) = \cos\left(\frac{2}{3}x + \frac{3}{7}\pi\right)$$

A	B
Period $= \dfrac{6\pi}{2}$ Phase Shift $= \dfrac{3}{2}\pi$ left	Period $= \dfrac{14\pi}{3}$ Phase Shift $= \dfrac{3}{2}\pi$ left
C	**D**
Period $= \dfrac{6\pi}{2}$ Phase Shift $= \dfrac{3}{7}$ left	Period $= \dfrac{6}{2}$ Phase Shift $= \dfrac{3}{7}\pi$ left

3 What are the phase shift and amplitude of this sinusoidal function?

$$f(x) = \frac{5}{3}\sin\left(x + \frac{8}{11}\pi\right)$$

A	B
Amplitude $= \dfrac{5}{3}$ Phase Shift $= \dfrac{8}{11}\pi$ left	Amplitude $= \dfrac{5}{3}$ Phase Shift $= \dfrac{8}{11}$ left
C	**D**
Amplitude $= \dfrac{5}{3}$ Phase Shift $= \dfrac{8}{11}\pi$ right	Amplitude $= \dfrac{8}{11}$ Phase Shift $= \dfrac{5}{3}\pi$ left

4 What are the amplitude and vertical shift of this sinusoidal function?

$$f(x) = \frac{3}{11}\sin(x) + \frac{6}{11}$$

A	B
Amplitude $= \dfrac{6}{11}$ Vertical Shift $= \dfrac{3}{11}$	Amplitude $= \dfrac{3}{11}$ Vertical Shift $= \dfrac{6}{11}$

5 What are the period and phase shift of this sinusoidal function?

$$f(x) = \cos\left(4x + \frac{7}{5}\pi\right)$$

A	B
Period $= \dfrac{2\pi}{4}$ Phase Shift $= \dfrac{7}{5}\pi$ right	Period $= \dfrac{10\pi}{7}$ Phase Shift $= 4\pi$ left
C	**D**
Period $= \dfrac{2\pi}{4}$ Phase Shift $= \dfrac{7}{5}\pi$ left	Period $= \dfrac{2}{4}$ Phase Shift $= \dfrac{7}{5}\pi$ left

6 What are the period and phase shift of this sinusoidal function?

$$f(x) = \sin\left(\frac{7}{3}\pi x + 2\right)$$

A	B
Period $= \dfrac{6}{7}$ Phase Shift $= 2$ left	Period $= \dfrac{6\pi}{7}$ Phase Shift $= 2$ left
C	**D**
Period $= \dfrac{6}{7}$ Phase Shift $= 2\pi$ left	Period $= \dfrac{2}{\frac{7}{3}}$ Phase Shift $= \dfrac{2}{3}$ left

7 What are the phase shift and vertical shift of this sinusoidal function?

$$f(x) = \sin(x + 4) + \frac{4}{3}$$

A	B
Phase Shift $= 4$ right Vertical Shift $= \dfrac{4}{3}$	Phase Shift $= 4$ left Vertical Shift $= \dfrac{4}{3}$
C	**D**
Phase Shift $= 4\pi$ left Vertical Shift $= \dfrac{4}{3}$	Phase Shift $= \dfrac{4}{3}$ left Vertical Shift $= 4$

8 What are the amplitude and vertical shift of this sinusoidal function?

$$f(x) = \frac{7}{11}\cos(x) + \frac{5}{11}$$

A	B
Amplitude $= \dfrac{5}{11}$ Vertical Shift $= \dfrac{7}{11}$	Amplitude $= \dfrac{7}{11}$ Vertical Shift $= \dfrac{5}{11}$