

Homework 17 (5.2)

Problem 5.2.2 refers to problem 2 in Chapter 5, Section 2 in the online text. Record your answers to all the problems in the EMCF titled “**Homework 17.**”

1. Problem 5.2.2
 - A. period is $2\frac{1}{2}$ units, amplitude is 8 units
 - B. period is 8 units, amplitude is 5 units
 - C. period is 5 units, amplitude is 8 units
 - D. period is 5 units, amplitude is 4 units
 - E. None of the above

2. Problem 5.2.4
 - A. period is 2 units, amplitude is -6 units
 - B. period is 2 units, amplitude is 3 units
 - C. period is 2 units, amplitude is 6 units
 - D. period is 6 units, amplitude is 2 units
 - E. None of the above

3. Problem 5.2.6
 - A. period is $\frac{2\pi}{3}$ units, amplitude is 10 units
 - B. period is $\frac{\pi}{3}$ units, amplitude is 10 units
 - C. period is $\frac{2\pi}{3}$ units, amplitude is 5 units
 - D. period is 10 units, amplitude is $\frac{2\pi}{3}$ units
 - E. None of the above

4. Problem 5.2.10

- A. $A(-\pi, -1)$ $B(3\pi, -1)$ $C(4\pi, 0)$ $D(8\pi, 0)$
- B. $A\left(-\frac{\pi}{4}, -1\right)$ $B\left(\frac{3\pi}{4}, -1\right)$ $C(\pi, 0)$ $D(2\pi, 0)$
- C. $A\left(-\frac{\pi}{2}, -1\right)$ $B\left(\frac{3\pi}{2}, -1\right)$ $C(2\pi, 0)$ $D(4\pi, 0)$
- D. None of the above

5. Problem 5.2.14

- A. a. $x = \frac{\pi}{2}, \frac{3\pi}{2}$ b. $x = \frac{3\pi}{2}$ c. $x = 0$
- B. a. $x = 0, \pi$ b. $x = \frac{\pi}{2}$ c. $x = 0$
- C. a. $x = \frac{\pi}{2}, \frac{3\pi}{2}$ b. $x = \pi$ c. $x = 0$
- D. a. $x = 0, \pi$ b. $x = \pi$ c. $x = 0$
- E. None of these

6. Problem 5.2.16

- A. a. $x = \frac{-\pi}{2}$ b. $x = \frac{-3\pi}{2}$ c. $x = -\pi$
- B. a. $x = -\pi$ b. $x = \frac{-\pi}{2}$ c. $x = \frac{-\pi}{2}$
- C. a. $x = \frac{-3\pi}{2}$ b. $x = \frac{-\pi}{2}$ c. $x = -\pi$
- D. a. $x = -\pi$ b. $x = \frac{-3\pi}{2}$ c. $x = \frac{-3\pi}{2}$
- E. None of these

7. Problem 5.2.28 – use the following list rather than the one in the text

- A. reflect about the y-axis, shift left 2 and up 3
- B. reflect about the x-axis, shift left 2 and up 3
- C. reflect about the x-axis, shift right 2 and up 3
- D. reflect about the y-axis, shift right 2 and up 3
- E. None of the above

8. Problem 5.2.32 – use the following list rather than the one in the text

- A. shrink (compress) horizontally, shift 8 units right
- B. shrink (compress) vertically shift 8 units right
- C. shrink (compress) horizontally, shift 4 units right
- D. shrink (compress) vertically, shift 4 units right
- E. None of the above.

9 – 12 **You are strongly urged to:**

Work these problems **completely** before looking at any of the answer choices. You will probably need to produce a graph of a trigonometric function on your test.

Problem 5.2.46

Problem 5.2.58

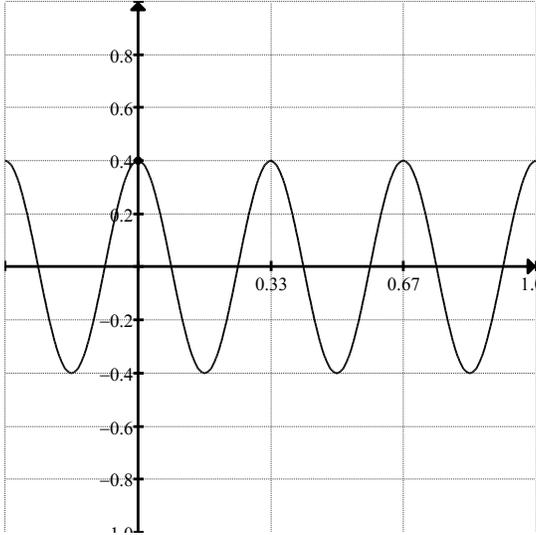
Problem 5.2.60

Problem 5.2.62 (graph is not given)

9. Problem 5.2.46

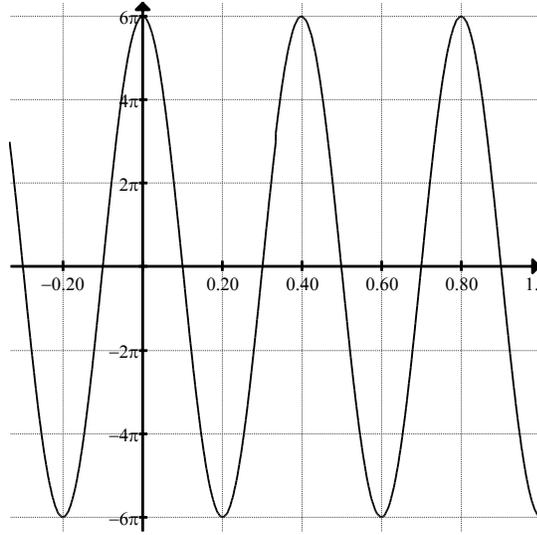
A. Period: $\frac{1}{3}$ Amplitude: $\frac{2}{5}$

Phase Shift: None Vertical Shift: None



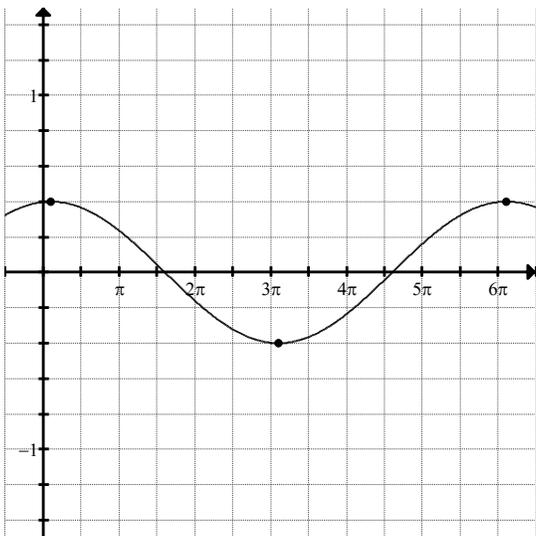
B. Period: $\frac{2}{5}$ Amplitude: 6π

Phase Shift: None Vertical Shift: None



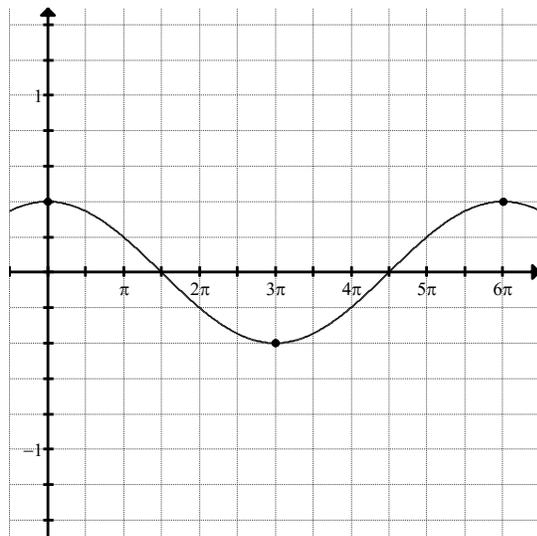
C. Period: 6π Amplitude: $\frac{2}{5}$

Phase Shift: $\frac{1}{3}$ right Vertical Shift: None



D. Period: 6π Amplitude: $\frac{2}{5}$

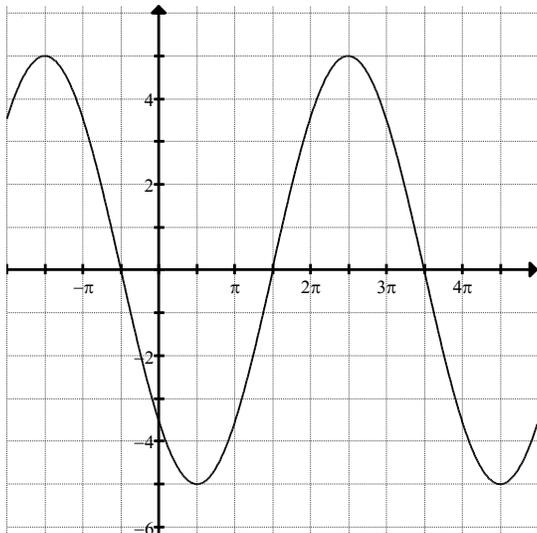
Phase Shift: None Vertical Shift: None



10. Problem 5.2.58

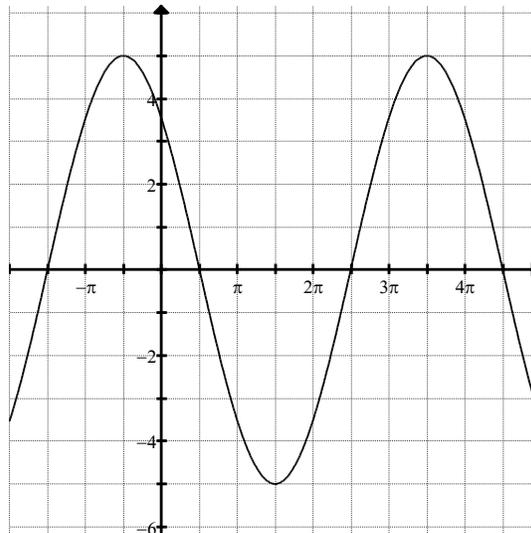
A. Period: 4π Phase Shift: $\frac{3\pi}{2}$ Right

Amplitude: 5 Vertical Shift: None



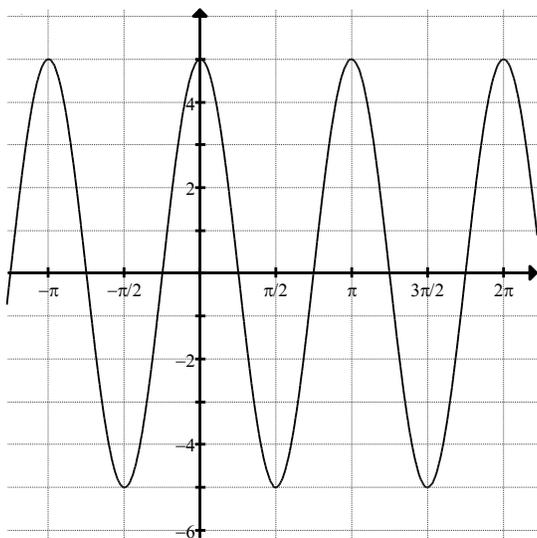
B. Period: 4π Phase Shift: $\frac{3\pi}{2}$ Left

Amplitude: 5 Vertical Shift: None



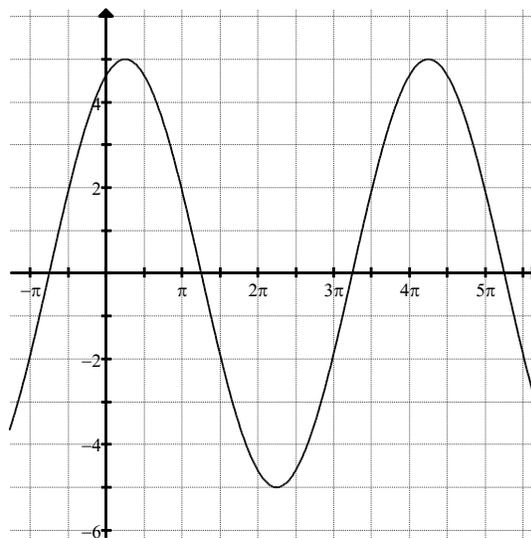
C. Period: π Phase Shift: $\frac{3\pi}{4}$ right

Amplitude: 5 Vertical Shift: None



D. Period: 4π Phase Shift: $\frac{3\pi}{4}$ Left

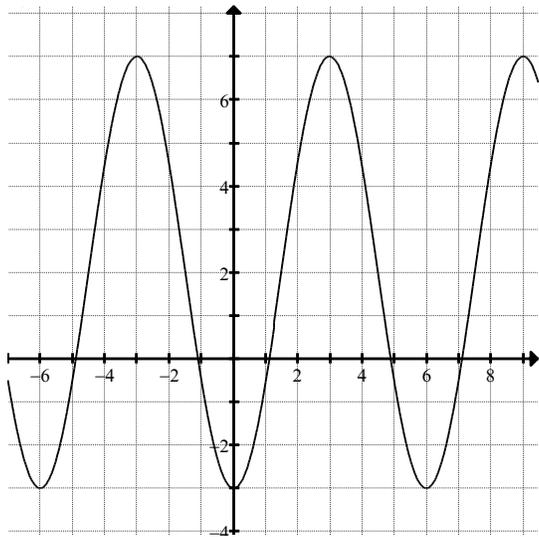
Amplitude: 5 Vertical Shift: None



11. Problem 5.2.60

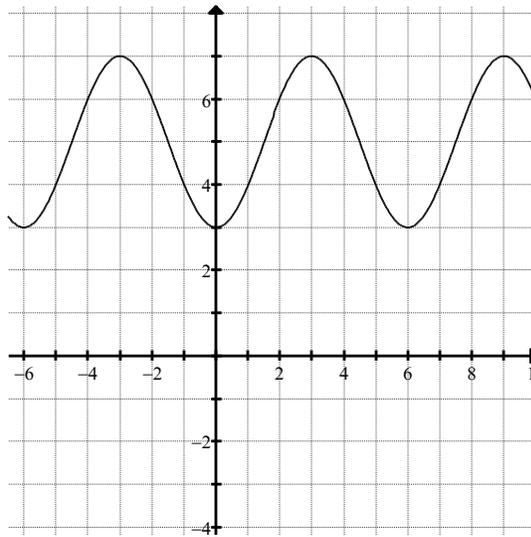
A. Period: 6 Phase Shift: 3 Left

Amplitude: 5 Vertical Shift: Up 2



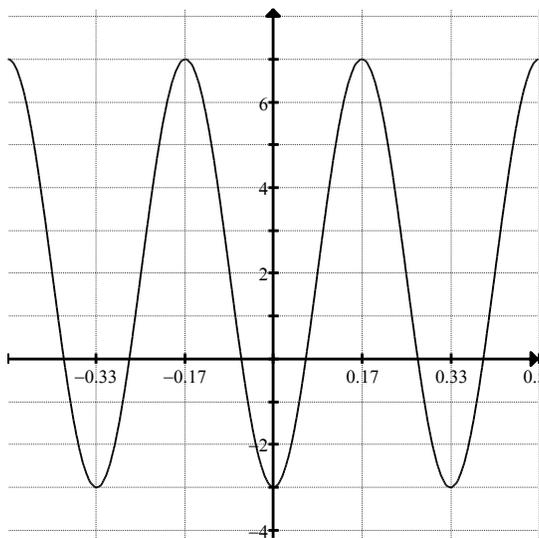
B. Period: 6 Phase Shift: 3 Right

Amplitude: 2 Vertical Shift: Up 5



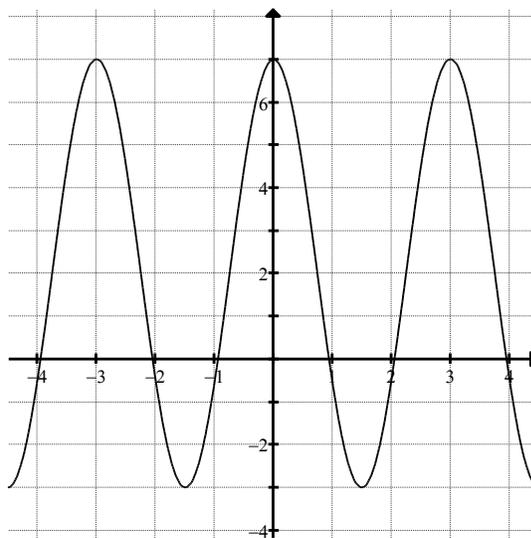
C. Period: $\frac{1}{3}$ Phase Shift: $\frac{1}{6}$ Left

Amplitude: 5 Vertical Shift: Up 2



D. Period: 3 Phase Shift: 3 Right

Amplitude: 5 Vertical Shift: Up 2



12. Problem 5.2.62

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|----|---------------|-----------------|------------------------------------|----------------------|
| A. | Period: π | Amplitude: -3 | Phase Shift: $\frac{\pi}{4}$ right | Vertical Shift: Up 4 |
| B. | Period: π | Amplitude: 3 | Phase Shift: $\frac{\pi}{4}$ right | Vertical Shift: Up 4 |
| C. | Period: π | Amplitude: 3 | Phase Shift: $\frac{\pi}{2}$ right | Vertical Shift: Up 4 |
| D. | Period: 2 | Amplitude: 3 | Phase Shift: $\frac{\pi}{4}$ left | Vertical Shift: Up 4 |

13. Problem 5.2.70

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|----|--------------------|---|
| A. | $f(x) = 6\cos(3x)$ | $f(x) = 6\sin\left(3x + \frac{\pi}{2}\right)$ |
| B. | $f(x) = 6\cos(3x)$ | $f(x) = 6\sin\left(3x + \frac{\pi}{6}\right)$ |
| C. | $f(x) = 6\cos(3x)$ | $f(x) = 6\sin\left(3x - \frac{\pi}{2}\right)$ |
| D. | $f(x) = 3\cos(6x)$ | $f(x) = 3\sin\left(6x + \frac{\pi}{2}\right)$ |

14. Problem 5.2.72

- | | | |
|----|------------------------|---|
| A. | $f(x) = -2\sin(\pi x)$ | $f(x) = 2\cos\left(\pi x - \frac{\pi}{2}\right)$ |
| B. | $f(x) = -2\sin(\pi x)$ | $f(x) = 2\cos\left(\pi x + \frac{\pi}{2}\right)$ |
| C. | $f(x) = 2\sin(\pi x)$ | $f(x) = -2\cos\left(\pi x + \frac{\pi}{2}\right)$ |
| D. | $f(x) = -2\sin(\pi x)$ | $f(x) = 2\cos\left(\pi x + \frac{1}{2}\right)$ |

15. Problem 5.2.74

A. $f(x) = -7 \cos\left(\frac{\pi}{3}x\right) + 4$

$$f(x) = 7 \sin\left(\frac{\pi x}{3} + \frac{\pi}{2}\right) + 4$$

B. $f(x) = -7 \cos\left(\frac{\pi}{6}x\right) + 4$

$$f(x) = 7 \sin\left(\frac{\pi x}{6} - \frac{\pi}{4}\right) + 4$$

C. $f(x) = -7 \cos\left(\frac{\pi}{3}x\right) + 4$

$$f(x) = 7 \sin\left(\frac{\pi x}{3} - \frac{\pi}{2}\right) + 4$$

D. $f(x) = -4 \cos\left(\frac{\pi}{3}x\right) + 7$

$$f(x) = 4 \sin\left(\frac{\pi x}{3} - \frac{\pi}{2}\right) + 7$$