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*Methods, Spring 2016*

*Unit Plan; Assessments*

**Algebra II Day 3 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graphing Sine and Cosine Period\_\_\_\_\_\_**

**With Amplitude and Period Changes**

**Directions:** Find the amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = 4cos(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 6sin(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = $\frac{1}{2}$ cos(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = sin( $\frac{1}{6}$ x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = cos($\frac{π}{2}$x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. g(x) = cos(24x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 4cos(2x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 4sin($π$x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = 2sin(8x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

**Algebra II Name\_\_\_\_\_\_\_\_ANSWER KEY\_\_\_**

**Graphing Sine and Cosine Period\_\_\_\_\_\_**

**With Amplitude and Period Changes**

**Directions:** Find the amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = 4cos(x)

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_2$π$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-4, 4]\_\_\_\_\_

5 main points: (0, 4); ($\frac{π}{2}$, 0); ($π, -4);\left(\frac{3π}{2}, 0\right);(2π, 4)$

1. y = 6sin(x)

Amplitude = \_\_\_\_6\_\_\_\_ Period = \_\_\_2$π$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-6, 6]\_\_\_\_\_

5 main points: (0, 0); ($\frac{π}{2}$, 6); ($π, 0);\left(\frac{3π}{2}, -6\right);(2π, 0)$

1. y = $\frac{1}{2}$ cos(x)

Amplitude = \_\_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_2$π$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[$\frac{-1}{2}, \frac{1}{2}$]\_\_\_\_\_

5 main points: (0, $\frac{1}{2}$); ($\frac{π}{2}$, 0); ($π, -\frac{1}{2});\left(\frac{3π}{2}, 0\right);(2π, \frac{1}{2})$

1. f(x) = sin( $\frac{1}{6}$ x)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_12$π$\_\_\_\_\_ Increment = \_\_$3π$\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-1, 1]\_\_\_\_\_

5 main points: (0, 0); ($3π$, 1); (6$π, 0);\left(9π, -1\right);(12π, 0)$

1. y = cos($\frac{π}{2}$x)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_4\_\_\_\_\_ Increment = \_\_\_1\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-1, 1]\_\_\_\_\_

5 main points: (0, 1); (1, 0); ($2, -1);\left(3, 0\right);(4, 1)$

1. g(x) = cos(24x)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_$\frac{1}{12}π$\_\_\_\_\_ Increment = \_\_\_$\frac{1}{48}$\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-1, 1]\_\_\_\_\_

5 main points: (0, 1); ($\frac{1}{48}$, 0); ($\frac{1}{24}, -1);\left(\frac{1}{16}, 0\right);(\frac{1}{12}, 1)$

1. y = 4cos(2x)

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_$π$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-4, 4]\_\_\_\_\_

5 main points: (0, 4); ($\frac{π}{4}$, 0); ($\frac{π}{2}, -4);\left(\frac{3π}{4}, 0\right);(π, 4)$

1. y = 4sin($π$x)

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_2\_\_\_\_\_ Increment = \_\_\_$\frac{1}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-4, 4]\_\_\_\_\_

5 main points: (0, 0); ($\frac{1}{2}$, 4); ($1, 0);\left(\frac{3}{2}, -4\right);(2, 0)$

1. f(x) = 2sin(8x)

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_$\frac{π}{4}$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{16}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-2, 2]\_\_\_\_\_

5 main points: (0, 0); ($\frac{π}{16}$, 2); ($\frac{π}{8}, 0);\left(\frac{3π}{16}, -2\right);(\frac{π}{4}, 0)$

**Algebra II Day 5 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graphing Sine and Cosine – Vertical Shifts Period\_\_\_\_\_\_**

**With Amplitude, Period Changes**

**Directions:** Find the vertical shift, amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x) + 3

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = cos(x) – 5

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 2cos(x) +1

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = -sin( $\frac{1}{2}$ x) + 3

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = -cos(2x) - 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. g(x) = cos(x) + 4

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = $\frac{1}{2}$cos(2x) – 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = $2\cos(\left(\frac{1}{2}x\right))-\frac{1}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = 2sin(4x) + $\frac{4}{3}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

**Algebra II Name\_\_\_\_\_\_\_\_ANSWER KEY\_\_\_**

**Graphing Sine and Cosine – Vertical Shifts Period\_\_\_\_\_\_**

**With Amplitude, Period Changes**

**Directions:** Find the vertical shift, amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x) + 3

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_2$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up 3\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[2, 4]\_\_\_\_\_\_

5 main points: $\left(0, 3\right);\left(\frac{π}{2}, 4\right);\left(π, 3\right);\left(\frac{3π}{2}, 2\right);(2π, 3)$

1. y = cos(x) – 5

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_2$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_down 5\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[-6, -4]\_\_\_\_\_\_

5 main points: $\left(0, -4\right);\left(\frac{π}{2}, -5\right);\left(π, -6\right);\left(\frac{3π}{2}, -5\right);(2π, -4)$

1. y = 2cos(x) +1

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_2$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up 1\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[-1, 3]\_\_\_\_\_\_

5 main points: $\left(0, 3\right);\left(\frac{π}{2}, 1\right);\left(π, -1\right);\left(\frac{3π}{2}, 1\right);(2π, 3)$

1. f(x) = -sin( $\frac{1}{2}$ x) + 3

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_4$π$\_\_\_\_ Increment = \_\_\_$π$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up 3\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[2, 4]\_\_\_\_\_\_

5 main points: $\left(0, 3\right);\left(π, 2\right);\left(2π, 3\right);\left(3π, 4\right);(2π, 3)$

1. y = -cos(2x) - 2

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_down 2\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[-3, -1]\_\_\_\_\_\_

5 main points: $\left(0, -3\right);\left(\frac{π}{4}, -2\right);\left(\frac{π}{2}, -1\right);\left(\frac{3π}{4}, -2\right);(π,-3)$

1. g(x) = cos(x) + 4

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_2$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up 4\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[3, 5]\_\_\_\_\_\_

5 main points: $\left(0, 5\right);\left(\frac{π}{2}, 4\right);\left(π, 3\right);\left(\frac{3π}{2}, 4\right);(2π, 5)$

1. y = $\frac{1}{2}$cos(2x) – 2

Amplitude = \_\_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_\_$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_down 2\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[$-\frac{5}{2}, -\frac{3}{2}$]\_\_\_\_\_\_

5 main points: $\left(0, -\frac{3}{2}\right);\left(\frac{π}{4}, -2\right);\left(\frac{π}{2}, -\frac{5}{2}\right);\left(\frac{3π}{4}, -2\right);(π, -\frac{3}{2})$

1. y = $2\cos(\left(\frac{1}{2}x\right))-\frac{1}{2}$

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_4$π$\_\_\_\_ Increment = \_\_\_$π$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_down $\frac{1}{2}$\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[$-\frac{5}{2}, \frac{3}{2}$]\_\_\_\_\_\_

5 main points: $\left(0, \frac{3}{2}\right);\left(π, -\frac{1}{2}\right);\left(2π, -\frac{5}{2}\right);\left(3π, -\frac{1}{2}\right);(4π, \frac{3}{2})$

1. f(x) = 2sin(4x) + $\frac{4}{3}$

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_$\frac{π}{2}$\_\_\_\_ Increment = \_\_\_$\frac{π}{8}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up $\frac{4}{3}$\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[$-\frac{2}{3},\frac{10}{3}$]\_\_\_\_\_\_

5 main points: $\left(0, \frac{4}{3}\right);\left(\frac{π}{8}, \frac{10}{3}\right);\left(\frac{π}{4}, \frac{4}{3}\right);\left(\frac{3π}{8}, \frac{10}{3}\right);(\frac{π}{2}, \frac{4}{3})$

**Algebra II Day 6 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graphing Sine and Cosine – Horizontal Shifts Period\_\_\_\_\_\_**

**With Vertical Shifts, Amplitude, Period Changes**

**Directions:** Find the amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x - π)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. y = cos(x + 3π)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. y = 4sin(x - $\frac{π}{2}$) +1

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. f(x) = cos( $\frac{1}{2}$ x – 2π) + 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. y = -cos(4x + π) - 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. g(x) = 2cos(2x + 4π) + 4

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. y = $\frac{1}{2}$sin(x - 5π) + 1

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. y = $7\cos(\left(\frac{1}{2}x-\frac{π}{4}\right))-\frac{1}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. f(x) = -sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

**Algebra II Name\_\_ANSWER KEY\_\_\_\_\_\_\_**

**Graphing Sine and Cosine – Horizontal Shifts Period\_\_\_\_\_\_**

**With Vertical Shifts, Amplitude, Period Changes**

**Directions:** Find the amplitude, period, and increment for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x - π)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_2π\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_none\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[-1, 1]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by π\_\_\_\_\_\_\_

5 main points: $\left(π,0\right);\left(\frac{3π}{2},1\right);\left(2π,0\right);\left(\frac{5π}{2},-1\right);(3π,0)$

1. y = cos(x + 3π)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_2π\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_none\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[-1, 1]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_left by 3π\_\_\_\_\_\_\_

5 main points: $\left(-3π,1\right);\left(-\frac{5π}{2},0\right);\left(-2π,-1\right);\left(-\frac{3π}{2},0\right);(-π,0)$

1. y = 4sin(x - $\frac{π}{2}$) +1

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_\_2π\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up 1\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[-3, 5]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by $\frac{π}{2}$\_\_\_\_\_\_\_

5 main points: $\left(\frac{π}{2},1\right);\left(π,5\right);\left(\frac{3π}{2},1\right);\left(2π,-3\right);(\frac{5π}{2},1)$

1. f(x) = cos( $\frac{1}{2}$ x – 2π) + 2

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_4π\_\_\_\_ Increment = \_\_\_π\_\_\_\_\_

Vertical Shift = \_\_\_\_up 2\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[1, 3]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by 2π\_\_\_\_\_\_\_

5 main points: $\left(2π,3\right);\left(3π,2\right);\left(4π,1\right);\left(5π,2\right);(6π,3)$

1. y = -cos(4x + π) - 2

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_$\frac{π}{2}$\_\_\_\_ Increment = \_\_\_$\frac{π}{8}$\_\_\_\_\_

Vertical Shift = \_\_\_\_down 2\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[-3, -1]\_\_\_

Horizontal Shift = \_\_\_\_left by π\_\_\_\_\_\_\_

5 main points: $\left(-π,-3\right);\left(-\frac{7π}{8},-2\right);\left(-\frac{3π}{4},-1\right);\left(-\frac{5π}{8},-2\right);(-\frac{π}{2},-3)$

1. g(x) = 2cos(2x + 4π) + 4

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_π\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up 4\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[2, 6]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_left by 4π\_\_\_\_\_\_\_

5 main points: $\left(-4π,6\right);\left(-\frac{15π}{4},4\right);\left(-\frac{7π}{2},2\right);\left(-\frac{13π}{4},4\right);(-3π,6)$

1. y = $\frac{1}{2}$sin(x - 5π) + 1

Amplitude = \_\_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_\_2π\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up 1\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[$\frac{1}{2},\frac{3}{2}$]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by 5π\_\_\_\_\_\_\_

5 main points: $\left(5π,1\right);\left(\frac{11π}{2},\frac{3}{2}\right);\left(6π,1\right);\left(\frac{13π}{2},\frac{1}{2}\right);(7π,1)$

1. y = $7\cos(\left(\frac{1}{2}x-\frac{π}{4}\right))-\frac{1}{2}$

Amplitude = \_\_\_\_7\_\_\_\_ Period = \_\_\_\_4π\_\_\_\_ Increment = \_\_\_π\_\_\_\_\_

Vertical Shift = \_\_\_\_down $\frac{1}{2}$\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[$-\frac{15}{2},\frac{13}{2}$]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by $\frac{π}{4}$\_\_\_\_\_\_\_

5 main points: $\left(\frac{π}{4},\frac{13}{2}\right);\left(\frac{5π}{4},-\frac{1}{2}\right);\left(\frac{9π}{4},-\frac{15}{2}\right);\left(\frac{13π}{4},-\frac{1}{2}\right);(\frac{17π}{4},\frac{13}{2})$

1. f(x) = -sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_π\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up $\frac{3}{2}$\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[$\frac{1}{2},\frac{5}{2}$]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by 3π\_\_\_\_\_\_\_

5 main points: $\left(3π,\frac{3}{2}\right);\left(\frac{13π}{4},\frac{1}{2}\right);\left(\frac{7π}{4},\frac{3}{2}\right);\left(\frac{15π}{4},\frac{5}{2}\right);(4π,\frac{3}{2})$

**Algebra II Day 8**

 **Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 2**

**Pythagorean Identity Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **sinθ =** $\frac{3}{4}$**, θ in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cosθ =** $\frac{12}{13}$**, θ in QIV**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **sinθ =** $-\frac{3}{4}$**, θ in QIII**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **sinθ =** $\frac{3}{4}$**, θ not in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cosθ =** $\frac{4}{7}$**, sinθ < 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cosθ =** $\frac{1}{3}$**, θ not in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **secθ =** $-\frac{5}{3}$**, θ in QIII**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **tanθ =** $\frac{4}{3}$**, θ in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **tanθ = 2, sinθ < 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cotθ =** $-\frac{12}{5}$**, cscθ > 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ < 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

**Algebra II**

 **Name\_\_\_ANSWER KEY\_\_\_\_\_\_**

**Unit 2**

**Pythagorean Identity Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **sinθ =** $\frac{3}{4}$**, θ in QI** QI means no negatives

sin(θ) = \_\_\_\_\_$\frac{3}{4}$\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{\sqrt{7}}{4}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{3\sqrt{7}}{7}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{4}{3}$\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{4\sqrt{7}}{7}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{\sqrt{7}}{3}$\_\_\_\_\_\_\_

1. **cosθ =** $\frac{12}{13}$**, θ in QIV** cos = +, sin = -

sin(θ) = \_\_\_\_\_$-\frac{5}{13}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{12}{13}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$-\frac{5}{12}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{13}{5}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{13}{12}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$-\frac{12}{5}$\_\_\_\_\_\_\_

1. **sinθ =** $-\frac{3}{4}$**, θ in QIII** both cos and sin are -

sin(θ) = \_\_\_\_\_$-\frac{3}{4}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-\sqrt{7}}{4}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{3\sqrt{7}}{7}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{4}{3}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{-4\sqrt{7}}{7}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{\sqrt{7}}{3}$\_\_\_\_\_\_\_

1. **sinθ =** $\frac{3}{4}$**, θ not in QI** sin = +, cos = -

sin(θ) = \_\_\_\_\_$\frac{3}{4}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-\sqrt{7}}{4}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{-3\sqrt{7}}{7}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{4}{3}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{-4\sqrt{7}}{7}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{-\sqrt{7}}{3}$\_\_\_\_\_\_\_

1. **cosθ =** $\frac{4}{7}$**, sinθ < 0** sin = -, cos = +

sin(θ) = \_\_\_\_\_$\frac{-\sqrt{33}}{7}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{4}{7}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{-\sqrt{33}}{4}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{-7\sqrt{33}}{33}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{7}{4}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{-4\sqrt{33}}{33}$\_\_\_\_\_\_

1. **cosθ =** $\frac{1}{3}$**, θ not in QI** sin = -, cos = +

sin(θ) = \_\_\_\_\_$-\frac{\sqrt{8}}{3}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{1}{3}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$-\sqrt{8}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{3\sqrt{8}}{8}$\_\_\_\_ sec(θ) = \_\_\_\_\_3\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$-\frac{\sqrt{8}}{8}$\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI** cos = +, sin = +

sin(θ) = \_\_\_\_\_$\frac{2}{3}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{\sqrt{5}}{3}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{2\sqrt{5}}{5}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{3}{2}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{3\sqrt{5}}{5}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{\sqrt{5}}{2}$\_\_\_\_\_\_\_

1. **secθ =** $-\frac{5}{3}$**, θ in QIII** cos = -, sin = -

sin(θ) = \_\_\_\_\_$\frac{4}{5}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-3}{5}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$-\frac{4}{3}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{5}{4}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$-\frac{5}{3}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$-\frac{3}{4}$\_\_\_\_\_\_\_

1. **tanθ =** $\frac{4}{3}$**, θ in QI** sin = +, cos = +

sin(θ) = \_\_\_\_$\frac{4}{5}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{3}{5}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{4}{3}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{5}{4}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{5}{3}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{3}{4}$\_\_\_\_\_\_\_

1. **tanθ = 2, sinθ < 0** sin = -, cos = +

sin(θ) = \_\_\_\_\_$-\frac{2\sqrt{5}}{5}$\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{\sqrt{5}}{5}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$2$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{\sqrt{5}}{2}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\sqrt{5}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{1}{2}$\_\_\_\_\_\_\_

1. **cotθ =** $-\frac{12}{5}$**, cscθ > 0** sin = +, cos = -

sin(θ) = \_\_\_\_\_$\frac{5}{13}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-12}{13}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$-\frac{5}{12}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{13}{5}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{-13}{12}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$-\frac{12}{5}$\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ < 0** cos = -, sin = -

sin(θ) = \_\_\_\_\_$-\frac{7}{25}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-24}{25}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{7}{24}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{25}{7}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{-25}{24}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{24}{7}$\_\_\_\_\_\_\_

**Algebra II Day 9 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Graphing Sine & Cosine – Review Worksheet Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Find the the given requirements for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = cos(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = $\frac{1}{2}$ cos(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 4sin($π$x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = -cos(2x) - 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = 2sin(4x) + $\frac{4}{3}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 4sin(x - $\frac{π}{2}$) +1

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. g(x) = 2cos(2x + 4π) + 4

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. f(x) = -sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **cosθ =** $\frac{12}{13}$**, θ in QIV**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ < 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

**Algebra II Name\_\_\_\_ANSWER KEY\_\_\_\_\_\_**

**Graphing Sine & Cosine – Review Worksheet Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Find the the given requirements for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = sin(x)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_\_\_(-$\infty ,\infty )$\_\_\_\_ Range = \_\_[-1, 1]\_\_\_\_\_\_

5 main points: (0, 0); ($\frac{π}{2}$, 1); ($π, 0);\left(\frac{3π}{2}, -1\right);(2π, 0)$

1. y = cos(x)

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_\_\_(-$\infty ,\infty )$\_\_\_\_ Range = \_\_[-1, 1]\_\_\_\_\_\_

5 main points: (0, 1); ($\frac{π}{2}$, 0); ($π, -1);\left(\frac{3π}{2}, 0\right);(2π, 1)$

1. y = $\frac{1}{2}$ cos(x)

Amplitude = \_\_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_2$π$\_\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[$\frac{-1}{2}, \frac{1}{2}$]\_\_\_\_\_

5 main points: (0, $\frac{1}{2}$); ($\frac{π}{2}$, 0); ($π, -\frac{1}{2});\left(\frac{3π}{2}, 0\right);(2π, \frac{1}{2})$

1. y = 4sin($π$x)

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_2\_\_\_\_\_ Increment = \_\_\_$\frac{1}{2}$\_\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-4, 4]\_\_\_\_\_

5 main points: (0, 0); ($\frac{1}{2}$, 4); ($1, 0);\left(\frac{3}{2}, -4\right);(2, 0)$

1. y = -cos(2x) - 2

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_$π$\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_down 2\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[-3, -1]\_\_\_\_\_\_

5 main points: $\left(0, -3\right);\left(\frac{π}{4}, -2\right);\left(\frac{π}{2}, -1\right);\left(\frac{3π}{4}, -2\right);(π,-3)$

1. f(x) = 2sin(4x) + $\frac{4}{3}$

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_$\frac{π}{2}$\_\_\_\_ Increment = \_\_\_$\frac{π}{8}$\_\_\_\_\_

Vertical Shift = \_\_\_\_\_up $\frac{4}{3}$\_\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[$-\frac{2}{3},\frac{10}{3}$]\_\_\_\_\_\_

5 main points: $\left(0, \frac{4}{3}\right);\left(\frac{π}{8}, \frac{10}{3}\right);\left(\frac{π}{4}, \frac{4}{3}\right);\left(\frac{3π}{8}, \frac{10}{3}\right);(\frac{π}{2}, \frac{4}{3})$

1. y = 4sin(x - $\frac{π}{2}$) +1

Amplitude = \_\_\_\_4\_\_\_\_ Period = \_\_\_\_2π\_\_\_\_ Increment = \_\_\_$\frac{π}{2}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up 1\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[-3, 5]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by $\frac{π}{2}$\_\_\_\_\_\_\_

5 main points: $\left(\frac{π}{2},1\right);\left(π,5\right);\left(\frac{3π}{2},1\right);\left(2π,-3\right);(\frac{5π}{2},1)$

1. g(x) = 2cos(2x + 4π) + 4

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_\_π\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up 4\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[2, 6]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_left by 4π\_\_\_\_\_\_\_

5 main points: $\left(-4π,6\right);\left(-\frac{15π}{4},4\right);\left(-\frac{7π}{2},2\right);\left(-\frac{13π}{4},4\right);(-3π,6)$

1. f(x) = -sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_1\_\_\_\_ Period = \_\_\_\_π\_\_\_\_ Increment = \_\_\_$\frac{π}{4}$\_\_\_\_\_

Vertical Shift = \_\_\_\_up $\frac{3}{2}$\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_\_ Range = \_\_[$\frac{1}{2},\frac{5}{2}$]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by 3π\_\_\_\_\_\_\_

5 main points: $\left(3π,\frac{3}{2}\right);\left(\frac{13π}{4},\frac{1}{2}\right);\left(\frac{7π}{4},\frac{3}{2}\right);\left(\frac{15π}{4},\frac{5}{2}\right);(4π,\frac{3}{2})$

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **cosθ =** $\frac{12}{13}$**, θ in QIV** cos = +, sin = -

sin(θ) = \_\_\_\_\_$-\frac{5}{13}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{12}{13}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$-\frac{5}{12}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{13}{5}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{13}{12}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$-\frac{12}{5}$\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI** cos = +, sin = +

sin(θ) = \_\_\_\_\_$\frac{2}{3}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{\sqrt{5}}{3}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{2\sqrt{5}}{5}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$\frac{3}{2}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{3\sqrt{5}}{5}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{\sqrt{5}}{2}$\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ < 0** cos = -, sin = -

sin(θ) = \_\_\_\_\_$-\frac{7}{25}$\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{-24}{25}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{7}{24}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_$-\frac{25}{7}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{-25}{24}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{24}{7}$\_\_\_\_\_\_\_

**Algebra II**

 **Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 2 Test**

**Graphing Sine and Cosine Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** From the term box below, write the correct term on the line in front of the correct definition. Each term can only be used once.

Amplitude, Horizontal Stretch, Horizontal Shrink, Horizontal Shift, Vertical Shift, Midline, Period, Increment

­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1) Making the period larger.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2) One full cycle of the trig function.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3) Moving the midline of the function up or down.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4) Making the period smaller.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5) The distance from the midline to the highest or lowest point of the graph.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6) Moving the starting point of the function left or right.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 7) Horizontal axis that is used as the reference line about which the graph of a trigonometric function oscillates.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 8) How far apart each of the 5 main points are.

**Directions:** Write down the 5 main points of each function.

1. y = sin(x)
2. y = cos(x)

**Directions:** Find the the given requirements for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = 5sin(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = -4cos(x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = $\frac{1}{2}$ cos(2x)

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = -sin($π$x) + 5

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = -cos($\frac{1}{2}$x) - 2

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. f(x) = 8sin(x) + $\frac{1}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

1. y = 2sin(x - $\frac{π}{2}$) + 9

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. g(x) = 2sin(2x + 4π) + 3

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

1. f(x) = -$\frac{1}{2}$sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_\_\_\_\_ Period = \_\_\_\_\_\_\_\_ Increment = \_\_\_\_\_\_\_\_

Vertical Shift = \_\_\_\_\_\_\_\_\_\_ Domain = \_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_\_\_\_\_\_\_\_

**Directions:** Write up **one** proof of the Pythagorean Identity.

1. **Proof:**

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **sinθ =** $\frac{12}{13}$**, θ in QIV**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ > 0**

sin(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sec(θ) = \_\_\_\_\_\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_\_\_\_\_\_\_\_

**Algebra II**

 **Name\_\_\_\_ANSWER KEY\_\_\_\_\_\_\_**

**Unit 2 Test**

**Graphing Sine and Cosine Period\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** From the term box below, write the correct term on the line in front of the correct definition. Each term can only be used once.

Amplitude, Horizontal Stretch, Horizontal Shrink, Horizontal Shift, Vertical Shift, Midline, Period, Increment

­­­­­\_\_\_\_\_Horizontal Stretch\_\_\_\_\_\_\_\_\_\_\_ 1) Making the period larger.

\_\_\_\_\_Period\_\_\_\_\_\_\_\_\_\_\_ 2) One full cycle of the trig function.

\_\_\_\_\_Vertical Shift\_\_\_\_\_\_\_\_\_\_\_ 3) Moving the midline of the function up or down.

\_\_\_\_\_Horizontal Shrink\_\_\_\_\_\_\_\_\_ 4) Making the period smaller.

\_\_\_\_\_Amplitude\_\_\_ 5) The distance from the midline to the highest or lowest point of the graph.

\_\_\_\_\_Horizontal Shift\_\_\_\_\_\_\_\_\_\_\_ 6) Moving the starting point of the function left or right.

\_\_\_\_\_Midline\_\_\_\_ 7) Horizontal axis that is used as the reference line about which the graph of a trigonometric function oscillates.

\_\_\_\_\_Increment\_\_\_\_\_\_\_\_\_\_\_ 8) How far apart each of the 5 main points are.

**Directions:** Write down the 5 main points of each function.

1. y = sin(x)

5 main points: $\left(0,0\right);\left(\frac{π}{2},1\right);\left(π, 0\right);\left(\frac{3π}{2}, -1\right);(2π,0)$

1. y = cos(x)

5 main points: $\left(0,1\right);\left(\frac{π}{2},0\right);\left(π, -1\right);\left(\frac{3π}{2}, 0\right);(2π,1)$

**Directions:** Find the given requirements for each function. Then graph **two** periods of the function. Label the axes correctly.

1. y = 5sin(x)

Amplitude = \_\_\_5\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{2}$\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-5, 5]\_\_\_\_\_

5 main points: (0, 0); ($\frac{π}{2}$, 5); ($π, 0);\left(\frac{3π}{2}, -5\right);(2π, 0)$

1. y = -4cos(x)

Amplitude = \_\_\_4\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{2}$\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-4, 4]\_\_\_\_\_

5 main points: (0, -4); ($\frac{π}{2}$, 0); ($π, 4);\left(\frac{3π}{2}, 0\right);(2π, -4)$

1. y = $\frac{1}{2}$ cos(2x)

Amplitude = \_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{4}$\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-$\frac{1}{2}$, $\frac{1}{2}$]\_\_\_\_\_

5 main points: (0, $\frac{1}{2}$); ($\frac{π}{4}$, 0); ($\frac{π}{2}, -\frac{1}{2});\left(\frac{3π}{4}, 0\right);(π, \frac{1}{2})$

1. y = -sin($π$x) + 5

Amplitude = \_\_\_1\_\_\_\_ Period = \_\_\_2\_\_\_\_\_ Increment = \_\_\_\_$\frac{1}{2}$\_\_\_\_

Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_\_ Range = \_\_\_[-1, 1]\_\_\_\_\_

5 main points: (0, 0); ($\frac{1}{2}$, -1); ($1, 0);\left(\frac{3}{2}, 1\right);(2, 0)$

1. y = -cos($\frac{1}{2}$x) - 2

Amplitude = \_\_\_1\_\_\_\_ Period = \_\_\_4π\_\_\_\_\_ Increment = \_\_\_\_π\_\_\_\_

Vertical Shift = \_\_\_\_down 2\_\_\_ Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_ Range = \_\_\_[-3, -1]\_\_

5 main points: (0, -3); (π, -2); ($2π, -1);\left(3π, -2\right);(4π, -3)$

1. f(x) = 8sin(x) + $\frac{1}{2}$

Amplitude = \_\_\_8\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{2}$\_\_\_\_

Vertical Shift = \_\_\_\_up $\frac{1}{2}$\_\_\_ Domain = \_\_(-$\infty ,\infty )$\_\_\_\_\_ Range = \_\_\_[$\frac{17}{2}, -\frac{15}{2}$]\_\_

5 main points: (0, $\frac{1}{2}$); ($\frac{π}{2}$, $\frac{17}{2}$); ($π, \frac{1}{2});\left(\frac{3π}{2}, -\frac{-15}{2}\right);(2π, \frac{1}{2})$

1. y = 2sin(x - $\frac{π}{2}$) + 9

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_2π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{2}$\_\_\_\_

Vertical Shift = \_\_\_\_up 9\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_ Range = \_\_[7, 11]\_\_\_\_\_\_

Horizontal Shift = \_\_\_\_right by $\frac{π}{2}$\_\_\_\_\_\_\_

5 main points: ($\frac{π}{2}$, 9); (π, 11); ($\frac{3π}{2}, 9);\left(2π, 7\right);(\frac{5π}{2}, 9)$

1. g(x) = 2sin(2x + 4π) + 3

Amplitude = \_\_\_\_2\_\_\_\_ Period = \_\_\_π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{4}$\_\_\_\_

Vertical Shift = \_\_\_up 3\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_ Range = \_[1, 5]\_\_\_

Horizontal Shift = \_\_\_\_left by 4π\_\_\_\_\_\_\_

5 main points: $\left(-4π, 3\right);\left(-\frac{15π}{4}, 5\right);\left(-\frac{7π}{2}, 3\right);\left(-\frac{13π}{4}, 1\right);(-3π, 3)$

1. f(x) = -$\frac{1}{2}$sin(2x – 3π) + $\frac{3}{2}$

Amplitude = \_\_\_\_$\frac{1}{2}$\_\_\_\_ Period = \_\_\_π\_\_\_\_\_ Increment = \_\_\_\_$\frac{π}{4}$\_\_\_\_

Vertical Shift = \_\_\_up $\frac{3}{2}$\_\_\_\_ Domain = \_\_\_(-$\infty ,\infty )$\_\_ Range = \_[1, 2]\_\_\_

Horizontal Shift = \_\_\_\_right by 3π\_\_\_\_\_\_\_

5 main points: $\left(3π, \frac{3}{2}\right);\left(\frac{13π}{4}, 1\right);\left(\frac{7π}{2}, \frac{3}{2}\right);\left(\frac{15π}{4}, 2\right);(4π, \frac{3}{2})$

**Directions:** Write up **one** proof of the Pythagorean Identity.

1. **Proof:**

x2 + y2 = r2 🡪 equation of a circle

x2 + y2 = 12 🡪 radius of unit circle is 1

x2 + y2 = 1 🡪 calculation

$cos^{2}\left(θ\right)+sin^{2}\left(θ\right)=1$ 🡪 substitution

$sin^{2}\left(θ\right)+cos^{2}\left(θ\right)=1$ 🡪 commutative property of addition

**Directions:** Given the information about one trigonometric value and what quadrant the point lies in, find the values of the other five trigonometric functions.

1. **sinθ =** $\frac{12}{13}$**, θ in QIV** sin = -, cos = +

sin(θ) = \_\_\_\_\_\_$\frac{-12}{13}$\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{5}{13}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{-12}{5}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_$\frac{-13}{12}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{13}{5}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{-5}{12}$\_\_\_\_\_\_\_

1. **cscθ =** $\frac{3}{2}$**, θ in QI** sin = +, cos = +

sin(θ) = \_\_\_\_\_\_$\frac{2}{3}$\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{\sqrt{5}}{3}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{2\sqrt{5}}{5}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_$\frac{3}{2}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{3\sqrt{5}}{5}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{\sqrt{5}}{2}$\_\_\_\_\_\_\_

1. **cscθ = –**$\frac{25}{7}$**, secθ > 0** sin = -, cos = +

sin(θ) = \_\_\_\_\_\_$\frac{-7}{25}$\_\_\_\_\_\_ cos(θ) = \_\_\_\_\_$\frac{24}{25}$\_\_\_\_\_\_\_ tan(θ) = \_\_\_\_\_\_$\frac{-7}{24}$\_\_\_\_\_\_\_

csc(θ) = \_\_\_\_\_\_$\frac{-25}{7}$\_\_\_\_\_ sec(θ) = \_\_\_\_\_$\frac{25}{24}$\_\_\_\_\_\_\_ cot(θ) = \_\_\_\_\_\_$\frac{-24}{7}$\_\_\_\_\_\_\_