**TRIGONOMETRY – RADIANS; SINE & COSINE GRAPHS**

NOTES:

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1. Convert 195**°** to radians. 2. Convert $\frac{3π}{8}$ to degrees.

3. Convert 140**°** 15’ 30” to decimal form. 4. Convert 56.3225° to degrees, minutes and seconds.

5. Find a coterminal angle between $0 and 2π$ for the following angles: a) $\frac{-8π}{3}$ b) $\frac{13π}{4}$

6. Write the equation of the cosine function with an amplitude of 2, a vertical shift down 1 and a period of $4π$.

7. Given: $y=\frac{1}{2}\sin(\left(3x-\frac{π}{6}\right))+4$, identify the amplitude, period, phase shift and vertical shift.

8. Sketch each of the following functions. Include the graph of the parent function for both.

a. $y=3\sin(\left(2x\right))+1$ b. $y=-2\cos(\left(\frac{1}{2}x\right)-2)$



**REGRESSION ANALYSIS**

NOTES:

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The table below compares a town’s distance from New York City to it’s median home value (in thousands of dollars). Use this data to answer the questions that follow.

1. Write the linear regression equation for this data.

2. Identify the correlation coefficient and the coefficient of determination.

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| Distance from NYC (miles) | Home Price (thousands) |
| 12 | 390 |
| 15 | 400 |
| 28 | 310 |
| 20 | 290 |
| 5 | 410 |
| 9 | 400 |
| 25 | 300 |
| 2 | 490 |
| 13 | 370 |
| 10 | 350 |
| 18 | 320 |
| 8 | 400 |

3. Predict the median price of a home 32 miles from NYC.

4. If a town has a median home value of $316,000, predict that town’s

 distance from NYC.

5. What is the residual value of a home in a town that is 18 miles from NYC?