**AC552**

**Week 6 Homework**

Please complete the below problems and submit your answers in the Week 6 Drop Box. See "Syllabus/Due Dates for Assignments & Exams" for due date information.
I highly recommend that you compute your variable rates to 3 or 4 decimal places to get a more accurate answer....

1. Jersey Subs, Inc. wants to find an equation to estimate monthly utility costs. Jersey Subs has been in business for one year and has collected the following cost data for utilities:



1. Which of the preceding costs is variable? Fixed? Mixed? Explain.
2. Using the high-low method, determine the cost function for each cost.
3. Combine the preceding information to get a monthly utility cost function for Jersey.(What is meant here is to get a total fixed cost for the three utilities and then add the formula for the variable amounts for each utility to get a formula that includes them all. The "function" is just having them all together in one complete formula.)
4. Next month, Jersey Subs expects to use 2,200 kilowatt hours of electricity, make 1,500 minutes of telephone calls, and use 32,000 gallons of water. Estimate total cost of utilities for the month.
5. Bolder Bikes, Inc. manufactures mountain bike frames in Boulder Colorado. In 2012, they produced 24,000 frames at a total cost of $1,296,000. Frames Unlimited, Inc. has offered to supply as many frames as Boulder Bikes wants at a cost of $49.50. Boulder Bikes anticipates needing 26,000 frames each year over the next few years. Boulder Bikes uses historical cost data to come up with the following regression equation with total manufacturing costs of the frame as the dependent variable and frames produced as the independent variable:

y=$545,000 + 21X

 During the years used to estimate the regression equation, the production of frames varied from 22,000 to 26,000.

1. Using this equation, estimate how much it would cost Boulder Bikes to manufacture the 26,000 frames.
2. How much more or less costly is it to manufacture the frames rather than to acquire them from Frames Unlimited?