**Quiz #5 (Module 16 and part of 17)**

1. **(11 points)** The time taken to assemble a car in a certain plant is Normally Distributed with a mean of 20 hours and a standard deviation of 2.5 hours.
   1. **(4 pts.)** Draw and clearly label the model and make sure you show the correct percentages for the Empirical rule.
   2. **(2 pts.)** What percent of the cars take more than 23 hours to assemble?
   3. **(2 pts.)** What percent of the cars take less than 16 hours to assemble?
   4. **(3 pts.)** What time is at the 85th percentile? Show all work for full credit.
2. **(9 points)** The probability model below describes the number of repair calls that an appliance repair shop may receive during an hour:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Repair Calls | 0 | 1 | 2 | 3 |
| Probability | 0.1 | 0.3 | 0.4 | ?? |

a) What is the probability that there are 3 repair calls during an hour? Please show your work.

b) Calculate the expected number of calls per hour? Show your work (or you will not get any credit!)

c) Explain in words what your answer in part b means. (write a sentence to explain the meaning of the value you calculated with regard to the context of this problem)