Functions

1. Kelly can tune 4 cars in 3 hours. If we assume he works at a constant rate, we can describe the situation using a function.

a) Write the function that represents Kelly's constant rate of work.

b) Use the function you wrote in part (a) as the formula for the function to complete the table below. Round your answers to the hundredths place.

Time spent tuning cars (x)	2	3	4	6	7
Number of cars tuned up (y)					

c) Kelly works 8 hours per day. According to this work, how many cars will he finish tuning at the end of a shift?

d) For this problem, we assumed that Kelly worked at a constant rate. Do you think that is a reasonable assumption for this situation? Explain.

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1. Kelly can tune 4 cars in 3 hours. If we assume he works at a constant rate, we can describe the situation using a function.

a) Write the function that represents Kelly's constant rate of work.

Let y represent the number of cars Kelly can tune up in x hours; then

$$\frac{y}{x} = \frac{4}{3}$$

$$y = \frac{4}{3}x$$

b) Use the function you wrote in part (a) as the formula for the function to complete the table below. Round your answers to the hundredths place.

Time spent tuning cars (x)	2	3	4	6	7
Number of cars tuned up (y)	2.67	4	5.33	8	9.33

c) Kelly works 8 hours per day. According to this work, how many cars will he finish tuning at the end of a shift?

Using the function, Kelly will tune up 10.67 cars at the end of his shift. That means he will finish tuning up 10 cars and begin tuning up the 11^{th} car.

d) For this problem, we assumed that Kelly worked at a constant rate. Do you think that is a reasonable assumption for this situation? Explain.

No, it does not seem reasonable to assume a constant rate for this situation. Just because Kelly tuned up 4 cars in 3 hours does not mean he spent the exact same amount of time on each car. One car could have taken 1 hour, while the other three could have taken 2 hours total.