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MATH 108
Fall 2022
HW 1: Due 09/08

Problem 1. (10pt) Ray runs a vegetable stand called 'Beets by Ray.' The radishes he sells cost him an average of $0.86 per radish in production costs. In order to turn a profit on their sale, he marks them up by 89.5%.

  (a) Find the amount by which Ray increases the beet price.

  (b) Using your answer from (a), find the price at which he markets the beets.

  (c) By recognizing the market price of the beets as a percent increase problem, find the market price of the beets you found in (b) 'directly.'

  (d) If a customer that purchases 36 beets from Ray and must pay a 7% tax, what is the final purchase price?

Solution.

  (a)

  (b)

  (c)

  (d)

Problem 2. (10pt) For each of the following, determine the likely dependent variable(s) and independent variable. Then determine, with an explanation, whether the independent variable is a function of the given dependent variable(s). If the independent variable is a function, write it in function notation using appropriate variables.

(a) The amount of sales at an electronic store given the number of people that have entered the store since opening.

(b) The amount of cars that have passed through an intersection some number of hours after 8 am.

(c) The amount of money earned at an hourly job given their hourly pay and hours worked.

(d) The number of children a couple has given their combined income (to the nearest thousand dollars) and the median of their ages.

Solution.

(a)

(b)

(c)

(d)

Problem 3. (10pt) Danisha just started as a sales representative at a local advertising firm. She received a $1,200 starting bonus and earns $38/hr.

(a) Explain why the amount Danisha has made, I, after working at this firm for d days is a linear function.

(b) Assuming Danisha works 8 hour days, find $I(d)$, the amount Danisha has made after working d days at the company.

(c) Interpret the slope and y-intercept from your answer in (b).

(d) How long until Danisha has earned $10,000 from working at the company?

Solution.

(a)

(b)

(c)

(d)

Problem 4. (10pt) Watch the following videos about issues with Excel:

- When Spreadsheets Attack!

- Top 10 Mistakes with Excel Spreadsheets Vol1

- Avoid These Excel Formatting Mistakes

After watching these videos, as detailed as possible, describe the following (in addition to any other observations you would like to make):

- What did you learn from these videos?

- What surprised you about these videos?

- What issues should you be aware of in Excel?

- What advice was given and did any of it seem contradictory?

Answers will vary.