**3.3 Lesson Notes**

The Value of My Car

(Materials: whiteboards or paper/flip chart)

You have decided to buy a new Honda Accord LX, but you are concerned about the value of the car depreciating over time. You search the Internet and obtain the following information.

|  |  |
| --- | --- |
| **n, YEARS** | **V, Value in Dollars** |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 5 |  |
| 8 |  |

2015 Honda Accord LX

● Suggested Retail Price: $21,105

● Depreciation per year: $1,385 (assume constant)

**GROUPS and WHOLE CLASS:**

1. Complete the table above.

2. What is the independent variable? What is the dependent variable?

3a. Select two ordered pairs of the form (*n*, V) from the table and determine the average rate of change.

b. What are the units of measure of the average rate of change?

c. What is the meaning of the sign of the average rate of change?

d. Based on the data in the table, should all groups get the same rate of change?

**THINK/TALK ABOUT IT:**

● What type of function is this? (increasing/decreasing/constant)

● Thinking about the value of a car depreciating, is the value of the car a linear function of the number of years of ownership. Explain your reasoning. Include the definition of a linear function in your reasoning. Record your initial thoughts below.

What Do You Remember?

(Provide specific examples: numbers, graphs, equations, etc.)

|  |  |  |
| --- | --- | --- |
| **x- Intercepts** | **y- Intercepts** | **Slope-Intercept Form of a Linear Equation** |
|  |  |  |

**Identify the x-intercept, y-intercept, and slope of each of the following equations. Write your intercepts as ordered pairs. Provide a rough sketch of each line.**

a. *y* = 2*x* + 10 b. *y* = -2*x* + 5 c. 2*x* + 3*y* = 12

**QUESTIONS to Explore:** (answers will vary; provide great opportunity for learning)

● What was different about the equation in part c?

● What are the advantages of having the equation in slope-intercept versus standard form?

● When was it easier to solve for the x-intercept? The y-intercept?

● When you have the x-intercept, y-intercept, and slope….what’s the easiest way to graph?

● Provide additional equations for exploration/clarifying misconceptions is needed.