

# Car Depreciation

Name(s): \_\_\_\_\_

From the minute that a car is driven off a dealership lot it begins to *depreciate* (drop in value over time). The N.A.D.A. Official Used Car Guide, or “blue book”, is a monthly listing of the trade-in values of used cars. The data below are taken from the N.A.D.A. guides for March 2008 and January 2009.

CAR VALUES	Purchase Price In March 2008	Trade-in Value In January 2009
2008 Toyota Prius	\$23,630	\$22,095
2008 Honda Civic EX Coupe	\$19,205	\$18,220
2008 Ford Focus SE Coupe	\$16,180	\$14,450

1. Let  $x=0$  represent March 2008 and one month be a unit. Let  $y$  represent the value of the car. For example:

Toyota Prius:  $(0, 23630)$   
 $(10, 22095)$

What are the ordered pairs for the other two cars in the table above?

Honda Civic:

Ford Focus:

2. Assuming that the values are depreciating in a *linear* pattern, plot each pair of points in #1 and then draw the corresponding line through that pair. This will give you three lines. Each line represents the trade-in value for a particular car over time.

Use the following scale:

**x-axis – let every other tic represent one month**

**y-axis – place a break at the beginning of the axis, start at \$10,000 and then let every tic mark represent \$500.**

3. At what rate (in dollars per month) is each car depreciating?

Toyota Prius: \_\_\_\_\_ Honda Civic: \_\_\_\_\_ Ford Focus: \_\_\_\_\_

4. Next to each line on the graph, put the line's slope. (Remember, if the value is decreasing over time, then the slope would be considered negative.)

5. What is the relationship between the rate of depreciation for each car and the corresponding slope of their line?

6. Which car seems like the best one to keep long term and why?

7. If each car continues to depreciate at this constant rate, what is the equation of the line that describes the depreciation for each? (Note: you have the slope and the y-intercept)

Toyota Prius: \_\_\_\_\_

Honda Civic: \_\_\_\_\_

Ford Focus: \_\_\_\_\_

8. If you trade in your Toyota Prius in September 2010, what would the trade-in value be?

\_\_\_\_\_

9. When would you have to trade in your Honda Civic if you wanted to get \$12,000 for the car?

\_\_\_\_\_

10. Suppose your Ford Focus is totaled in an accident in July 2011, how much would you get from the insurance company if they agreed to give you the trade-in value?

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