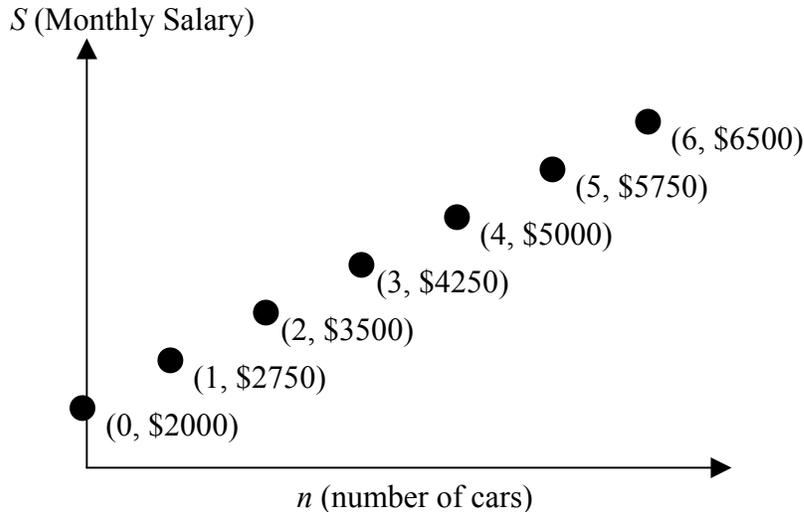


Algebra 2: Word Problem Review for First Semester Final

- An airline charges \$190 to fly 460 miles and \$250 to fly 700 miles. Assume the information can be modeled with a linear function.
 - Find an equation for the price versus amount of miles flown.
 - What does the slope represent? What does the y -intercept represent?
 - How much would it cost to fly 1200 miles?
 - How far will \$300 get you?
- The height of a rectangle is 7 cm greater than the length of its base. If its area is 60 cm^2 , find its height.
- An old lawnmower can cut a certain yard in 21 minutes. The new lawnmower can cut the yard in 15 minutes. How long does it take to cut the yard using both mowers?
- Sarah ran up a hill at 6 km/hr and down the same hill at 10 km/hr. If she ran for 80 minutes total, how far did she run?
- I want to make 1.8 L of 10% pickle juice by mixing 7.5% and 12% pickle juices. How much of each do I need?
- Bailey can clean his room in 60 seconds. If Hanna helps, they can do it together in 15 seconds. How long does it take Hanna by herself?
- To estimate the number of geckos in the forest, 300 were caught and marked. Later 100 geckos were caught and 8 of these were marked. How many geckos total live in the forest? (What is the name of the math idea involved?)
- The centrifugal force acting on an object moving in a circle is directly proportional to the square of the speed of the object. If 8 m/s produces a force of 2240 N, what is the force at 12 m/sec?
- The heat loss through a window varies jointly with the area of the window and the difference between the inside and outside temperatures. 720 BTU is lost through a 3 m^2 window when the temperature difference is 15°C . What is the heat loss through the same type of window that is 4.5 m^2 in area and the inside temp is 20°C while the outside is 8°C ?
- Slick Johnny works as a used car salesman. He gets a set monthly salary of \$2000 plus gets paid \$750 for every car he sells.
 - Write an equation for his monthly salary (S) that Johnny earns in terms of the number of cars (n) that he sells.
 - Graph the equation.
 - Does the part of the graph with negative " c " values have any physical meaning? Explain.
 - Use the formula to find the number of cars sold to earn \$6000. Does this make sense? Explain.

Word Problem Review for 1st Semester Final Answers

- $C = 0.25m + 75$ $C =$ Cost in dollars $m =$ distance in miles
 - slope = cost per mile, y -int = fixed cost to get an airline ticket
 - \$375
 - 900 miles
- height = 12 cm
- 8.75 mins or 8 mins 45 secs
- 5 km uphill + 5 km downhill = 10 km total
- 0.8 L of 7.5% pickle juice and 1 L of 12% pickle juice
- 20 seconds
- 3750 geckos (direct variation)
- 5040 N
- 864 BTU
- $S = 750c + 2000$ $S =$ Monthly Salary $n =$ number of cars sold
 -



- No, he cannot see a negative number of cars
- 5.33 cars. This cannot happen so he will never make \$6000 exactly in a month.