Course: Algebra I

Topic: Semester A Exam Review: Part 1

Subtopics: Direct and inverse variation; Speed, distance, and time problems

Document: LIVE Stream 1

Reference Number: 1949-4

https://youtube.com/c/MrMattTheTutor

1) Calculate the value of the missing variable, and determine the constant of variation:
   a. X varies directly with Y. If X is 10 when Y is 20, then what is the value of X when Y is 80?
   b. X varies inversely with Y. If X is 30 when Y is 5, what is the value of Y when X is 15?

2) Calculate the missing speed, distance, or time: (S = D/T)
   a. Ricardo drove his car 40 miles in 1.25 hours. What was his average speed in miles per hour?
   b. Ricardo drove his car 30 miles at an average speed of 60 miles per hour. How many hours did he spend driving?
   c. Ricardo drove his car for 4.5 hours at an average speed of 40 miles per hour. How many miles did he travel?

3) Calculate the value of the missing variable, and determine the constant of variation:
   a. A varies directly with B. If A is 50 when B is 75, then what is the value of B when A is 125?
   b. A varies inversely with B. If A is 60 when B is 12, what is the value of A when B is 36?

4) Calculate the missing speed, distance, or time: (S = D/T)
   a. Roxanna drove her motorcycle 100 miles in 2.75 hours. What was her average speed in miles per hour?
   b. Roxanna drove her motorcycle 165 miles at an average speed of 30 miles per hour. How many hours did she spend traveling?
   c. Roxanna drove her motorcycle for 120 minutes at an average speed of 50 miles per hour. How many miles did she travel?

5) Calculate the value of the missing variable, and determine the constant of variation:
   a. H varies directly with G. If H is 25 when G is 125, then what is the value of G when H is 75?
   b. H varies inversely with G. If H is 800 when G is 600, what is the value of H when G is 1000?

6) Calculate the missing speed, distance, or time: (S = D/T)
   a. Toni drove her car 150 miles in 180 minutes. What was her average speed in miles per hour?
   b. Toni drove her car 200 miles at an average speed of 20 miles per hour. How many hours did she spend traveling?
   c. Toni drove her car for 6.75 hours at an average speed of 45 miles per hour. How many miles did she travel?