

Summer Session, Worksheet for Lesson 18

FOR ALL PROBLEMS: Include appropriate units(examples: inches, volts, cows, etc.) with all answers.

- 1) The distance d that an object falls is directly proportional to the square of the time of the fall, t . A person who is parachuting for the first time is told to wait 8 seconds before opening the parachute. If the person falls 64 feet in 2 seconds, find how far he falls in 8 seconds.

- 2) The electrical current I in an electric conductor varies inversely as the resistance R of the conductor. The current is $\frac{1}{3}$ of an ampere when the resistance is 810 ohms. What is the current when the resistance is 360 ohms?

NOTE: Write your answer as an integer or fraction.

- 3) The number of long distance phone calls between two cities in a certain time period varies jointly as the populations of the cities, p_1 and p_2 , and inversely as the distance between them. If 90,000 calls are made between cities 400 miles apart, with populations of 120,000 and 70,000, how many call are made between cities with populations of 85,000 and 65,000 that are 250 miles apart?

NOTE: When finding the constant of proportionality, k , round k to four decimal places and use this rounded value of k to calculate your final answer.