

Your distance from lightning varies directly with the time it takes you to hear thunder. If you hear thunder 10 seconds after you see the lightning, you are about 2 miles from the lightning. Estimate how many seconds it would take for the thunder to travel a distance of 4 miles.

A recipe for 2 dozen corn muffins calls for 3 cup of flour. The number of muffins varies directly with the amount of flour you use. Estimate how many cups of flour are needed to make 6 dozen muffins.

The amount of heat ( $H$ ) produced in human body by burning of proteins is directly proportional to the amount of proteins ( $A$ ) burnt. If burning of 1 gram of proteins produces 32 calories of heat, how much proteins should be burnt to produce 52 calories?

In kick boxing, it is found that the force,  $f$ , needed to break a board, varies inversely with the length,  $l$ , of the board. If it takes 5 lbs of pressure to break a board 2 feet long, how many pounds of pressure will it take to break a board that is 6 feet long?

The time to complete a project is inversely proportional to number of people who is doing the project. A certain project can be completed by 5 workers in 24 days. In order to finish the project sooner, the company plans to hire additional workers. How many workers are needed to finish the project in 15 days?

The amount of money raised at a charity fundraiser is directly proportional to the number of attendees. The amount of money raised for five attendees was \$100. How much money will be raised for 60 attendees?

The force needed to keep a car from skidding on a curve varies jointly as the weight of the car and the square of the speed, and inversely as the radius of the curve. It takes 3800 pounds of force to keep an 1800 pound car from skidding on a curve with radius 425 feet at a speed of 45 mph. What force is needed to keep the same car from skidding when it takes a similar curve with radius 450 feet at 55 mph?

The number of calories needed in a daily diet varies directly as the weight of an individual. If 1,550 calories should be consumed daily for a 155-pound person, what is the weight of an individual who consumes 1,790 calories per day

The price of tiling a room varies directly as the size of the room. Sam is laying tile in his kitchen. If the tiling costs \$1,918.00 for 274 square feet, what is the size of a kitchen that costs \$1,596.00?

The number of goals scored by a soccer team varies directly as the number of shots on goal. If the Lakeside Bears scored 2 goals after 24 shots on goal, how many shots on goal should the team take to score two more goals?

The number of miles a car can be driven varies directly with the number of gallons of gas in its tank. Oliver was able to drive 399 miles with 19 gallons of gas in his car. If he puts 8 gallons of gas in the same car, how many miles will he be able to drive?

To build a sound wall along the highway, the amount of time  $t$  needed varies directly with the number of cement blocks  $c$  needed and inversely with the number of workers  $w$ . A sound wall made of 2400 blocks, using six workers takes 18 hours to complete. How long would it take to build a wall of 4500 blocks with 10 workers?

The number of hours needed to assemble computers varies directly as the number of computers and inversely as the number of workers. If 4 workers can assemble 12 computers in 9 hours, how many workers are needed to assemble 48 computers in 8 hours?

The number of minutes needed to solve an exercise set of variation problems varies directly as the number of problems and inversely as the number of people working on the solutions. It takes 4 people 36 minutes to solve 18 problems. How many minutes will it take 6 people to solve 42 problems.

The electrical resistance of a wire varies directly as its length and inversely as the square of its diameter. A wire with a length of 200 inches and a diameter of one-quarter of an inch has a resistance of 20 ohms. Find the electrical resistance in a 500 inch wire with the same diameter.

The maximum load that a cylindrical column with a circular cross section can hold varies directly as the fourth power of the diameter and inversely as the square of the height. A 9 meter column 2 meters in diameter will support 64 metric tons. How many metric tons can be supported by a column 9 meters high and 3 meters in diameter?

The volume of gas varies directly as the temperature and inversely as the pressure. If the volume is 230 cubic centimeters when the temperature is 300°K and the pressure is 20 pounds per square centimeter, what is the volume when the temperature is 270 °K and the pressure is 30 pounds per square centimeter?