

Number:

Textbook Section:

Title:

Direct variation

Indirect variation

Joint variation

1. P is directly proportional to T . If $T = 300$, $P = 20$. Find P if $T = 400$.
2. H is inversely proportional to n . If $H = 9$ when $n = -6$, find H if $n = 18$.
3. Suppose y varies jointly with x and z . When $y = 20$, $x = 6$ and $z = 10$. Find y if $x = 8$ and $z = 15$.

Determine whether the first variable varies directly or inversely with the other variable. Construct a function for the variation using the appropriate variation constant.

4. The price for each person sharing a \$20 pizza, the number of hungry people
5. The area of a rectangle of width 10 in, the length of the same rectangle
6. The height of a ball thrown into the air, the number of seconds since the ball was thrown
7. The volume of gas in a nitrogen gas shock absorber varies directly with the temperature of the gas and inversely with the amount of weight on the piston. If the volume is 10 in^3 at 80°F with a weight of 600 lb, then what is the volume at 90°F with a weight of 800 lb?
8. The power P (measured in horsepower, hp) needed to propel a boat is directly proportional to the cube of the speed s . An 80-hp engine is needed to propel a certain boat at 10 knots. Find the power needed to drive the boat at 15 knots.