

Joint and Combined Variation Practice Problems

*Make sure to use correct UNITS, when applicable

- 1) If f varies jointly as g and the cube of h , and $f = 200$ when $g = 5$ and $h = 4$, find f when $g = 3$ and $h = 6$.
- 2) If y varies jointly as x and z , and $y = 33$ when $x = 9$ and $z = 12$, find y when $x = 16$ and $z = 22$.
- 3) If a varies jointly as b and the square root of c , and $a = 21$ when $b = 5$ and $c = 36$, find a when $b = 9$ and $c = 225$.
- 4) For a given interest rate, simple interest varies jointly as principal and time. If \$2000 left in an account for 4 years earns interest of \$320, how much interest would be earned in if you deposit \$5000 for 7 years?
- 5) Wind resistance varies jointly as an object's surface area and velocity. If an object traveling at 40 mile per hour with a surface area of 25 square feet experiences a wind resistance of 225 Newtons, how fast must a car with 40 square feet of surface area travel in order to experience a wind resistance of 270 Newtons?

Variation Word Problems (All Types)

****Make sure to use correct UNITS when applicable**

1) The amount of water that has leaked from a faucet varies directly with time. In 2 hours, 10 gallons of water leak.

a. Describe what happens to the amount of water as time increases.

b. What is the constant of variation?

c. How much water leaks in 100 hours?

d. How long does it take for 100 gallons to leak?

2) The grade you earn in math varies inversely with the number of minutes per night you watch television. If you watch 90 minutes per night, you get a 60 in math.

a. What is the constant of variation?

b. How much television can you watch if you want to make a 70?

c. You cut back on your television to only 75 minutes a night, what grade will you make in math?

d. What is the maximum amount of television you can watch and still make a 100?

3) The volume of a pyramid varies jointly as its height and the area of its base. A pyramid with a height of 12 feet and a base with area of 23 square feet has a volume of 92 cubic feet. Find the volume of a pyramid with a height of 17 feet and a base with an area of 27 square feet.