

Variation Problems

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether the variation between the indicated quantities is direct or inverse.

- 1) The price of an item and the quantity of the item that you can purchase with a given amount of money 1) _____
A) Inverse B) Direct
- 2) The weight of a baby in pounds and his age in months 2) _____
A) Inverse B) Direct
- 3) The number of hours worked by an hourly worker and the amount of her paycheck 3) _____
A) Direct B) Inverse
- 4) The balance on your credit card and the amount of available credit 4) _____
A) Direct B) Inverse

Determine whether the equation represents direct, inverse, joint, or combined variation.

- 5) $y = \frac{6}{x}$ 5) _____
A) Direct B) Combined C) Inverse D) Joint
- 6) $y = 5x^5$ 6) _____
A) Combined B) Inverse C) Direct D) Joint

Solve the problem.

- 7) If s varies directly as t^2 , and $s = 108$ when $t = 6$, find s when t is 4. 7) _____
A) 24 B) 18 C) 72 D) 48
- 8) If m varies directly as p , and $m = 36$ when $p = 9$, find m when p is 6. 8) _____
A) 16 B) 24 C) 36 D) 81
- 9) If x varies inversely as y^2 , and $x = 5$ when $y = 15$, find x when $y = 5$. 9) _____
A) 125 B) 45 C) 3 D) 75
- 10) The distance it takes to stop a car varies directly as the square of the speed of the car. If it takes 112 feet for a car traveling at 40 miles per hour to stop, what distance is required for a speed of 49 miles per hour? 10) _____
A) 180.37 ft B) 168.41 ft C) 168.07 ft D) 144.06 ft
- 11) The current I in an electrical conductor varies inversely as the resistance R of the conductor. The current is 6 amperes when the resistance is 341 ohms. What is the current when the resistance is 737 ohms? 11) _____
A) 2.8 amps B) 0.36 amps C) 0.08 amps D) 13 amps

- 12) The intensity of a radio signal from the radio station varies inversely as the square of the distance from the station. Suppose the the intensity is 8000 units at a distance of 2 miles. What will the intensity be at a distance of 4 miles? Round your answer to the nearest unit. 12) _____
- A) 2000 units B) 1983 units C) 1964 units D) 2026 units
- 13) For a fixed amount of principal, the simple interest varies jointly with the rate and the time. If the simple interest is \$1500 when the rate is 5% and the time is 6 years, find the simple interest when the rate is 7% and the time is 10 years. 13) _____
- A) \$3500 B) \$7000 C) \$350 D) \$3850

