

Quiz: Solving Combinations of Variations

1 A video store rents DVDs, and the weekly total number varies directly with the total inventory, and varies inversely with the cost of each rental tape. It rented a total of 3000 DVDs when its inventory was 900 and the cost per rental was \$1.8. If its inventory does not change, what would be the effect on the weekly total number of increasing the cost per rental to \$2?

2 Time for a printing job varies directly with the number of pages and inversely with the number of copiers. It takes 24 minutes for 3 copiers to finish a printing job. If 10 copiers work together to print the job, how long will it take to finish?

3 Time for a typing job varies directly with the number of pages and inversely with the number of copiers. It takes an average person 80 minutes to type 66 pages on the computer. If 8 average typists work together to type 9 page paper, how long will it take them?

4 Money that Daisy can spend to rent movie varies directly with her monthly allowance savings and inversely with the number of books she buys. She has \$60 saved from her allowance this month to rent movies and buy books. If she buys 3 books, she will only be able to rent 2 movies. How many movies will she be able to rent if she only buys 4 books with monthly savings of \$70?

5 A ball is dropped from a window of a building. The distance it falls varies directly with the square of the time it falls. If a ball can fall 5 feet in 1.2 seconds, how far will it fall if it takes 2.5 seconds for it to hit the ground?

6 Paul must help his father carry paper rolls to the store room and the time taken for it varies directly with number of rolls and inversely with number of people. There are 30 paper rolls, it takes Paul and his father 38 minutes, but if 3 of his friends join, how long will it take all of them to carry those rolls?

7 Sam must help his father carry bags of soil to the backyard and the time taken for it varies directly with number of bags and inversely with number of people. There are 50 bags of soil. It takes Sam and his father 38 minutes, but if 3 of his friends join, how long will it take all of them to carry those bags?

8 In building a brick wall, the amount of time it takes to complete the wall varies directly with the number of bricks in the wall and varies inversely with the number of bricklayers that are working together. A wall containing 1467 bricks, using 10 bricklayers, takes 14 hours to build. How long would it take to build a wall of 1830 bricks if 6 bricklayers worked on it?

9 In a power plant, the power produced varies directly with the amount of water available, and varies inversely with the temperature of the water. The plant has a power rating of 74,000 units when there is a flow of 40,000 gallons of water per hour, and the temperature of the water is 62° . Find the power rating produced if the water available drops to 27,000 gallons per hour, and temperature rises to 72° .

10 A ball is dropped from a window of a building. The distance it falls varies directly with the square of the time it falls. If a ball can fall 12 feet in 0.3 seconds, how far will it fall if it takes 1.5 seconds for it to hit the ground?

Circle # Correct	0	1	2	3	4	5	6	7	8	9	10
Percentage Score	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%