applications of direct & inverse variation

WHEN DO WE USE DIRECT?	WHEN DO WE USE INVERSE?
In situations where as one variable _____, the other variable _____.	In situations where as one variable _____, the other variable _____.

direct variation examples

1. The sales at a baseball game vary directly with the number of people attending. If the sales for a game are $12,000 when 800 people attend, determine how many people attend if the sales for a game are $15,000.

2. Ounces of medication vary directly with the weight of the patient. If a 120 lb. adult requires three-fourths of an ounce of medication, how many ounces are required for a 200 lb. adult?

3. The number of shares varies directly with the amount of dividends received per year. If Kim owns 5 shares of stock and receives $12 per year, how many shares of stock will she need to receive $24?

4. Acreage varies directly with the production in bushels of wheat produced. In a 20-acre field, 300 bushels of wheat are produced. At this rate, how many bushels will be produced in a 50-acre field?

5. The income of a computer analyst varies directly as the number of hours worked. If the analyst earns $256 for working 8 hours, find the constant of variation.

6. The gallons of water used to take a shower vary directly with the number of minutes in the shower. If an 8 minute shower uses 48 gallons of water, find the constant of variation

inverse variation examples

7. Time traveling varies inversely with the average speed. If a train travels between two cities in 3 hours at an average speed of 65 miles per hour, how long would it take at an average speed of 78 miles per hour?

8. A company that produces laptops has determined that the number of laptops it can sell varies inversely to the price of the laptop. Two thousand laptops can be sold when the price is $2,500. How many laptops can be sold if the price of the laptop is $1,000?

9. The width of a rectangle varies inversely with its length. If the width is 4 when the length is 18, find the width when the length is 8.

10. The number of workers varies inversely with the time in days to complete a project. Five workers can complete a certain project in 24 days. How many workers will be needed to complete the project in 15 days?

11. The time it takes to bake a turkey varies inversely with the oven temperature. If it takes 3 hours to bake a turkey at 300 degrees, find the constant of variation.

12. The cost per person to rent a cottage in the Outer Banks is inversely proportional to the number of people who share the rent. If 7 people share and it costs $42 per person, find the constant of variation