



Problem 1 – Effect of k on direct variation

Explore the graph of direct variation on page 1.3.

- What happens to the value of y as x increases? As x decreases?
- What do you notice about the y -intercept of the line?
- When does the direct variation line have a positive slope? A negative slope?
- For which value of k does the direct variation model not appear on screen? Why do you think this is?
- How does the constant of variation value, k , affect the graph?

Problem 2 – Application of direct variation

Read the example of direct variation on page 2.1.

- In the equation $P = w \cdot h$, which letter represents the constant of variation?
- Rewrite the wage function if the employee is being paid \$6.50 per hour.
- Rewrite the wage function for a person who earns \$9 per hour.

Use the slider and the point on page 2.5 to answer the following questions.

- Set the wage to \$6.50. How much does the employee earn for 26 hours?
- The employee earned a raise to \$7.10 per hour. How much will he or she get paid for 22.5 hours of work?



Problem 3 – Effect of k on inverse variation

Explore the graph of inverse variation on page 3.2.

- What happens to the value of y as x increases? As x decreases?
- In what quadrants does the graph appear when k is positive? When k is negative?
- For which value of k does the inverse variation model not appear on screen? Why do you think this is?
- How does the constant of variation value, k , affect the graph?

Problem 4 – Application of inverse variation

Read the example of inverse variation on page 4.1.

- In the equation $R = \frac{S}{h}$, which letter represents the constant of variation?
- Rewrite the rate function if the employee is being paid \$900 per week.
- Rewrite the rate function for a person who earns \$650 per week.

Use the slider and the point on page 4.6 to answer the following questions.

- Set the salary to \$775. If an employee works 45 hours during the week, how much is earned per hour?
- Jose took a day of vacation and worked only 32 hours. How much does he earn per hour if his salary is \$800?

Extension – Writing a variation equation

On the pages 5.2 to 5.5, determine if the graph is a direct or inverse variation. Explain how you know. Then calculate the value of k .

Page 5.2:

Page 5.3:

Page 5.4:

Page 5.5: