

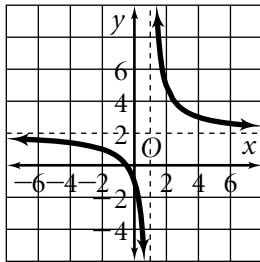
Chapter Practice

Chapter 9

For Exercises 1–7, choose the correct letter.

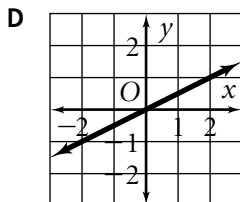
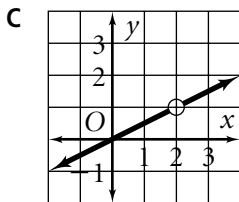
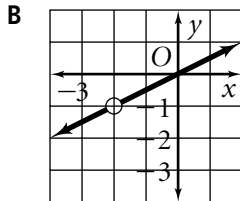
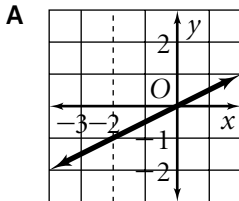
1. A car traveled 200 mi in 4 h. At the same speed, how long would it take for the car to travel 125 mi?
- A 130 min B 2.25 h
 C 120 min D 2.3 h
 E 2 h 30 min

2. Which equation has the graph below?



- A $y = 2 + \frac{3}{x+1}$ B $y = 3 + \frac{2}{2x-1}$
 C $y = \frac{2x+3}{x-1}$ D $y = \frac{2}{3x-1}$
 E $y = 3 + \frac{2}{x-1}$

3. Which of the following is a graph of the function $y = \frac{x^2 + 2x}{2(x+2)}$?

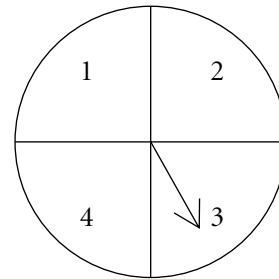


- E none of the above

4. Which of the following is equal to $\frac{x^2 - 8x}{x - 8} \cdot \frac{x + 2}{x}$?

- A $\frac{x+2}{x}$ B $x - 8$
 C $2x$ D $x + 2$
 E none of the above

5. Based on the spinner shown, which of the following pairs of events are mutually exclusive?



- A $P(2), P(\text{even number})$
 B $P(3), P(\text{prime number})$
 C $P(\text{even number}), P(\text{odd number})$
 D $P(4), P(\text{number greater than 2})$
 E $P(1), P(\text{number less than 3})$

6. Simplify $\frac{x-3}{x^2+3x-18}$.

- A $\frac{1}{x-6}$ B $\frac{1}{x+6}$
 C $\frac{1}{6-x}$ D 0
 E none of the above

7. The graph of $y = \frac{2}{x}$ is to be translated 3 units right and 4 units down. What is the new equation?

- A $y = \frac{2}{x-3} + 4$ B $y = \frac{2}{x-3} - 4$
 C $y = \frac{2}{x+3} + 4$ D $y = \frac{2}{x+3} - 4$
 E none of the above

For Exercises 8–10, compare the values in Column A and Column B. Choose the best answer.

- A The value in Column A is greater.
- B The value in Column B is greater.
- C The two values are equal.
- D The relationship cannot be determined on the basis of the information supplied.

Column A

Column B

8.	number of removable discontinuities in the graph of the function $y = \frac{x^3 - x^2 - 2x}{x^2 - x - 2}$	number of removable discontinuities in the graph of the function $y = \frac{x^2 + x}{x^2 - x - 2}$
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9.	x if $\frac{x}{x + 4} = \frac{1}{2}$	x if $\frac{x}{x + 10} = \frac{1}{3}$
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10.	probability of rolling a 2 or a 3 with a number cube	probability of rolling a 3 or a 4 with a number cube
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For Exercises 11–19, write your answer.

- 11.** Identify the relationship as a direct variation or an inverse variation. Then write an equation to model the data.

x	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{2}$
y	$\frac{1}{2}$	1	$\frac{3}{2}$

- 12.** Sketch the graph of $y = 3 + \frac{4}{x + 1}$. Identify any asymptotes.
- 13.** Simplify $\frac{6x^2 - 7x - 3}{4x^2 - 8x + 3}$.
- 14.** Simplify $\frac{3}{x^2 - 9} - \frac{2}{x^2 + 6x + 9}$.
- 15. Open-ended** Sketch a translation of $y = \frac{7}{x}$. Write the equation of the graph. Identify any asymptotes.

- 16.** Write the constant of variation for the inverse variation containing the point $(3, \frac{1}{2})$.
- 17.** Find any horizontal asymptotes for the function $y = \frac{6x^2 + 3}{x^2 - 7x}$.
- 18.** Solve $\frac{5 + x}{6} - \frac{10 - x}{3} = 1$.
- 19.** Solve $\frac{10}{x} - 2 = \frac{5 - x}{4x}$.