

7 Chapter Review



Review Key Vocabulary

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|-----------------------------------|--|-----------------------------------|
| equation, p. 296 | solution of an equation in two variables, p. 316 | inequality, p. 326 |
| solution, p. 302 | independent variable, p. 316 | solution of an inequality, p. 327 |
| inverse operations, p. 303 | dependent variable, p. 316 | solution set, p. 327 |
| equation in two variables, p. 316 | | graph of an inequality, p. 328 |

Review Examples and Exercises

7.1 Writing Equations in One Variable (pp. 294–299)

Write the word sentence “The quotient of a number b and 6 is 9” as an equation.

The quotient of a number b and 6 is 9.

$$\underbrace{\hspace{10em}}_{b \div 6} = 9 \quad \text{Quotient of means division.}$$

∴ An equation is $b \div 6 = 9$.

Exercises

Write the word sentence as an equation.

- The product of a number m and 2 is 8. _____
- 6 less than a number t is 7. _____
- A number m increased by 5 is 7. _____
- 8 is the quotient of a number g and 3. _____

7.2 Solving Equations Using Addition or Subtraction (pp. 300–307)

Solve $z + 5 = 13$.

$$z + 5 = 13$$

Write the equation.

Undo the addition.

$$\begin{array}{r} -5 \\ z + 5 = 13 \\ \hline z = 8 \end{array}$$

Subtraction Property of Equality

Simplify.

∴ The solution is $z = 8$.

Check

$$z + 5 = 13$$

$$8 + 5 \stackrel{?}{=} 13$$

$$13 = 13 \quad \checkmark$$

Exercises

Solve the equation. Check your solution.

5. $x - 1 = 8$

Solution: _____

Check: _____

6. $m + 7 = 11$

Solution: _____

Check: _____

7. $21 = p - 12$

Solution: _____

Check: _____

7.3**Solving Equations Using Multiplication or Division** (pp. 308–313)

Undo the multiplication.

Solve $4c = 32$.

$$4c = 32$$

Write the equation.

$$\frac{4c}{4} = \frac{32}{4}$$

Division Property of Equality

$$c = 8$$

Simplify.

Check

$$4c = 32$$

$$4(8) \stackrel{?}{=} 32$$

$$32 = 32 \quad \checkmark$$

Exercises**Solve the equation. Check your solution.**

8. $7 \cdot q = 42$

Solution: _____

Check: _____

9. $7k \div 3 = 21$

Solution: _____

Check: _____

10. $\frac{5a}{7} = 25$

Solution: _____

Check: _____

7.4

Writing Equations in Two Variables (pp. 314–321)

Tell whether (6, 16) is a solution of the equation $y = 3x - 4$.

$$16 \stackrel{?}{=} 3(6) - 4 \quad \text{Substitute.}$$

$$16 \neq 14 \quad \text{Compare.}$$

∴ So, (6, 16) is *not* a solution.

Exercises

Tell whether the ordered pair is a solution of the equation.

11. $y = 3x + 1$; (2, 7)

12. $y = 7x - 4$; (4, 22)

13. **TAXI** A taxi ride costs \$3 plus \$2.50 per mile. Write and graph an equation in two variables that represents the total cost of a taxi ride.

Equation: _____

Graph your equation in two variables on your grid and write # 13.

7.5 Writing and Graphing Inequalities (pp. 324–331)

Write the word sentence as an inequality.

a. A number x is more than -9 .

A number x is more than -9 .
 $x > -9$

••• An inequality is $x > -9$.

b. A number r divided by 2 is at most 4.

A number r divided by 2 is at most 4.
 $\frac{r}{2} \leq 4$

••• An inequality is $\frac{r}{2} \leq 4$.

Exercises

Write the word sentence as an inequality.

14. A number m is less than 5.

15. A number h is at least -12 .

Graph the inequality on a number line.

16. $x < 0$

17. $a \geq 3$

18. $n \leq -1$

7.6 Solving Inequalities Using Addition or Subtraction (pp. 332–337)

Solve $1 \leq x - 4$. Graph the solution.

Undo the subtraction.

$$1 \leq x - 4$$

Write the inequality.

$$\xrightarrow{+4} \quad +4 \quad +4$$

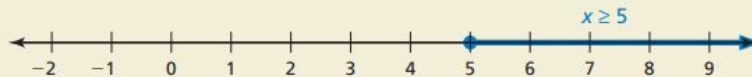
Addition Property of Inequality

$$5 \leq x$$

Simplify.

The inequality $5 \leq x$ is the same as $x \geq 5$.

∴ The solution is $x \geq 5$.



Exercises

Solve the inequality. Graph the solution.

19. $x + 1 > 3$

Solution: _____

Graph:

20. $k - 7 \leq 0$

Solution: _____

Graph:

26. $s - 1.5 < 2.5$

Solution: _____

Graph:

27. $\frac{1}{4} + m \leq \frac{1}{2}$ Solution: _____

Graph:

7.7 Solving Inequalities Using Multiplication or Division (pp. 338–343)

Solve $7n < 42$. Graph the solution.

$7n < 42$ Write the inequality.

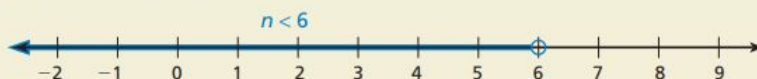
Undo the multiplication.

$\frac{7n}{7} < \frac{42}{7}$

Division Property of Inequality

$n < 6$ Simplify.

••• The solution is $n < 6$.



Exercises

Solve the inequality. Graph the solution.

28. $x \div 2 < 4$ Solution: _____

Graph:

29. $9n \geq 63$ Solution: _____

Graph:

30. $\frac{5}{3}x \leq 10$

Solution: _____

Graph:

33. $\frac{3}{11}k < 15$

Solution: _____

Graph:

34. **TICKETS** The cost of three tickets to a movie is at least \$20. Write and solve an inequality that represents the situation.

Inequality: _____

Solution: _____

