Practice 7-1

Solve each equation.

1. $4x - 17 = 31$ _____

2. $15 = 2m + 3$ _____

3. $\frac{k}{3} + 3 = 8$ _____

4. $7 = 3 + \frac{h}{6}$ _____

5. $9n + 18 = 81$ _____

6. $5 = \frac{y}{3} - 9$ _____

7. $14 = 5k - 31$ _____

8. $\frac{t}{9} - 7 = -5$ _____

9. $\frac{v}{8} - 9 = -13$ _____

10. $25 - 13f = -14$ _____

Solve each equation using mental math.

11. $3p + 5 = 14$ _____

12. $\frac{k}{2} - 5 = 1$ _____

13. $\frac{m}{7} - 3 = 0$ _____

14. $10v - 6 = 24$ _____

15. $8 + \frac{x}{2} = -7$ _____

16. $7 = 6r - 17$ _____

Choose the correct equation. Solve.

17. Tehira has read 110 pages of a 290-page book. She reads 20 pages each day. How many days will it take to finish?

A. $20 + 110p = 290$

B. $20p + 290 = 110$

C. $110 + 20p = 290$

D. $290 = 110 - 20p$

_____

Write an equation to describe the situation. Solve.

18. A waitress earned $73 for 6 hours of work. The total included $46 in tips. What was her hourly wage?

_____

_____

19. You used $6\frac{3}{4}$ c of sugar while baking muffins and nutbread for a class party. You used a total of $1\frac{1}{2}$ c of sugar for the muffins. Your nutbread recipe calls for $1\frac{3}{4}$ c of sugar per loaf. How many loaves of nutbread did you make?

_____

_____

Practice 7-2

Solve and check each equation.

1. $\frac{p}{3} - 7 = -2$

2. $2(n - 7) + 3 = 9$

_____

_____

3. $0 = 5(k + 9)$

4. $4h + 7h - 16 = 6$

_____

_____

5. $3(2n - 7) = 9$

6. $-27 = 8x - 5x$

_____

_____

7. $4p + 5 - 7p = -1$

8. $7 - y + 5y = 9$

_____

_____

9. $8e + 3(5 - e) = 10$

10. $-37 = 3x + 11 - 7x$

_____

_____

11. $9 - 3(n - 5) = 30$

12. $\frac{1}{6}(y + 42) - 15 = -3$

_____

_____

Write and solve an equation for each situation.

13. Find three consecutive integers whose sum is 51.

_____

_____

14. Find three consecutive integers whose sum is −15.

_____

_____

15. Find four consecutive integers whose sum is 30.

_____

_____

16. Jack's overtime wage is $3 per hour more than his regular hourly wage. He worked for 5 hours at his regular wage and 4 hours at the overtime wage. He earned $66. Find his regular wage.

_____

Practice 7-3

Multi-Step Equations With Fractions and Decimals

Solve and check each equation.

1. $0.7n - 1.5 + 7.3n = 14.5$

_____

2. $18p - 45 = 0$

_____

3. $16.3k + 19.2 + 7.5k = -64.1$

_____

4. $h + 3h + 4h = 100$

_____

5. $40 - 5n = -2$

_____

6. $14 = \frac{2}{3}(9y - 15)$

_____

7. $\frac{2}{3}y - 6 = 2$

_____

8. $1.2m + 7.5m + 2.1 = 63$

_____

9. $\frac{7}{8}h - \frac{5}{8} = 2$

_____

10. $93.96 = 4.7p + 8.7p - 2.6p$

_____

11. $9w - 16.3 = 5.3$

_____

12. $88.1 - 2.3f = 72.46$

_____

13. $-15.3 = -7.5k + 55.2$

_____

14. $26e + 891 = -71$

_____

15. $2.3(x + 1.4) = -9.66$

_____

16. $(x - 17.7) + 19.6 = 27.8$

_____

Write an equation to describe each situation. Solve.

17. Jolene bought three blouses at one price and 2 blouses priced $3 below the others. The total cost was $91.50. Find the prices of the blouses.

_____

18. A car rented for $29 per day plus $.08 per mile. Julia paid $46.12 for a one-day rental. How far did she drive?

_____

By what number would you multiply each equation to clear denominators or decimals? Do not solve.

19. $\frac{1}{3}z + \frac{1}{6} = 5\frac{1}{6}$

_____

20. $3.7 + 2.75k = 27.35$

_____

Practice 7-4

Write an equation. Then solve.

1. Bill purchased 4 pens for $3.32, including $.16 sales tax. Find the cost of
   1 pen.

   _____

   _____

2. Arnold had $1.70 in dimes and quarters. He had 3 more dimes than
   quarters. How many of each coin did he have?

   _____

   _____

3. A baby weighed 3.2 kg at birth. She gained 0.17 kg per week. How old
   was she when she weighed 5.75 kg?

   _____

   _____

4. In the parking lot at a truck stop there were 6 more cars than 18-wheel
   trucks. There were 134 wheels in the parking lot. How many cars and
   trucks were there?

   _____

   _____

5. The product of 6 and 3 more than k is 48.

   _____

   _____

6. A bottle and a cap together cost $1.10. The bottle costs $1 more than the
   cap. How much does each cost?

   _____

   _____

   _____

7. The perimeter of a rectangular garden is 40 ft. The width is 2 ft more
   than one half the length. Find the length and width.

   _____

   _____

Practice 7-5

Solving Equations With Variables on Both Sides

Solve each equation.

1. $3k + 16 = 5k$

_____

2. $5e = 3e + 36$

_____

3. $n + 4n - 22 = 7n$

_____

4. $2(x - 7) = 3x$

_____

5. $8h - 10h = 3h + 25$

_____

6. $7n + 6n - 5 = 4n + 4$

_____

7. $11(p - 3) = 5(p + 3)$

_____

8. $9(m + 2) = -6(m + 7)$

_____

9. $y + 2(y - 5) = 2y + 2$

_____

10. $-9x + 7 = 3x + 19$

_____

11. $k + 9 = 6(k - 11)$

_____

12. $-6(4 - t) = 12t$

_____

13. $2(x + 7) = 5(x - 7)$

_____

14. $5m + 9 = 3(m - 5) + 7$

_____

15. $5x + 7 = 6x$

_____

16. $k + 12 = 3k$

_____

17. $8m = 5m + 12$

_____

18. $3p - 9 = 4p$

_____

Write an equation for each situation. Solve.

19. The difference when 7 less than a number is subtracted from twice the number is 12. What is the number?

_____

_____

20. Four less than three times a number is three more than two times the number. What is the number?
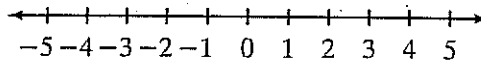
_____

_____

_____

Practice 7-6

Solve each inequality. Graph the solutions on a number line.

1. $5x + 2 \leq 17$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$

2. $7x + 2x \geq 21 - 3$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$

3. $9 - x > 10$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$

4. $19 + 8 \leq 6 + 7x$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$

5. $-6x < 12$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$

6. $\frac{x}{-4} > 0$ _____

$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$
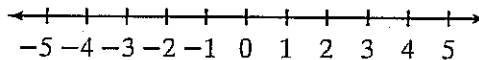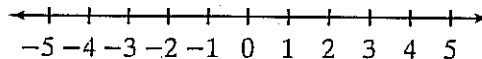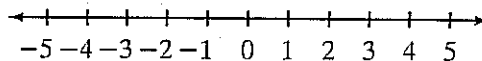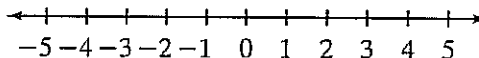
Solve each inequality.

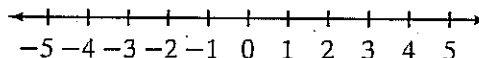**7.** $2x - 5 > 1$ _____

8. $9x - 7 \leq 38$ _____

9. $3 < \frac{1}{2}x + 1$ _____

10. $-12 < -12x$ _____

11. $-8x + 18 > -22$ _____

12. $50 < 8 - 6x$ _____

13. $\frac{1}{5}x + 6 > -3$ _____

14. $30 \geq -6(5 - x)$ _____

Write an inequality for each situation. Then solve the inequality.

15. Nine more than half the number n is no more than -8. Find n.

_____

_____

16. Judith drove h hours at a rate of 55 mi/h. She did not reach her goal of driving 385 miles for the day. How long did she drive?

_____

_____

Practice 7-7

Use this information to answer Exercises 1–4: Shopping City has a 6% sales tax.

1. Solve the formula $c = 1.06p$ for p, where c is the cost of an item at Shopping City, including tax, and p is the selling price.

   _____

2. Clara spent \$37.10 on a pair of pants at Shopping City. What was the selling price of the pants?

   _____

3. Manuel spent \$10.59 on a basketball at Shopping City. What was the selling price of the ball?

   _____

4. Clara and Manuel's parents spent \$165.84 on groceries at Shopping City. How much of that amount was sales tax?

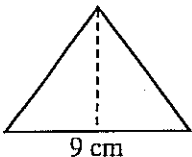   _____

Transform the formulas.

5. The area of a triangle A can be found with the formula $A = \frac{1}{2}bh$ where b is the length of the base of the triangle and h is the height of the triangle. Solve the formula for h.

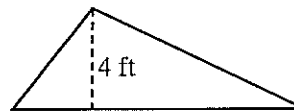   _____
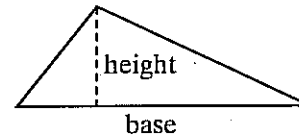
6. Solve the formula $A = \frac{1}{2}bh$ for b.

   _____

Find the missing part of each triangle.

7. $A = 27 \text{ cm}^2$

   9 cm

   $h = \underline{\hspace{3cm}}$

8. $A = 18 \text{ ft}^2$

   4 ft

   $b = \underline{\hspace{3cm}}$

Solve for the variable indicated.

9. $V = \frac{1}{3}lwh$, for w

   _____

10. $\frac{1}{a} + \frac{1}{b} = \frac{1}{c}$, for c

   _____

Practice 7-8

Find each balance.

	Principal	Interest rate	Compounded	Time (years)	Balance
1.	$400	7%	annually	3	
2.	$8,000	5%	annually	9	
3.	$1,200	4%	semi-annually	2	
4.	$50,000	6%	semi-annually	6	

Find the simple interest.

5. $900 deposited at an interest rate of 3% for 5 years

_____

6. $1,348 deposited at an interest rate of 2.5% for 18 months

_____

Complete each table. Compound the interest annually.

7. $5,000 at 6% for 4 years.

Principal at beginning of year	Interest	Balance
Year 1: $5,000		
Year 2:		
Year 3:		
Year 4:		

8. $7,200 at 3% for 4 years

Principal at beginning of year	Interest	Balance
Year 1: $7,200		
Year 2:		
Year 3:		
Year 4:		

Pre-Algebra Chapter 7

Chapter 7 Answers

Practice 7-1

1. $x = 12$ 2. $m = 6$ 3. $k = 15$ 4. $h = 24$
5. $n = 7$ 6. $y = 42$ 7. $k = 9$ 8. $t = 18$
9. $v = -32$ 10. $f = 3$ 11. $p = 3$ 12. $k = 12$
13. $m = 21$ 14. $v = 3$ 15. $x = -30$
16. $r = 4$ 17. C; $p = 9$; it will take her 9 days.
18. $6w + 46 = 73$; $w = 4.5$; she earned $4.50 an
hour. 19. $b \cdot 1\frac{3}{4} + 1\frac{1}{2} = 6\frac{3}{4}$; $b = 3$; you made 3
batches of nut bread.

Practice 7-2

1. $p = 15$ 2. $n = 10$ 3. $k = -9$ 4. $h = 2$
5. $n = 5$ 6. $x = -9$ 7. $p = 2$ 8. $y = \frac{1}{2}$
9. $e = -1$ 10. $x = 12$ 11. $n = -2$
12. $y = 30$ 13. $n + (n + 1) + (n + 2) = 51$;
$16, 17, 18$ 14. $n + (n + 1) + (n + 2) = -15$;
$-6, -5, -4$ 15. $n + (n + 1) + (n + 2)$
$+ (n + 3) = 30$; $6, 7, 8, 9$ 16. $5h + 4(h + 3)$
$= 66$; $6/h

Practice 7-3

1. $n = 2$ 2. $p = 2.5$ 3. $k = -3.5$
4. $h = 12\frac{1}{2}$ 5. $n = 8.4$ 6. $y = 4$ 7. $y = 12$
8. $m = 7$ 9. $h = 3$ 10. $p = 8.7$ 11. $w = 2.4$
12. $f = 6.8$ 13. $k = 9.4$ 14. $e = -37$
15. $x = -5.6$ 16. $x = 25.9$
17. $3x + 2(x - 3) = 91.50$; $19.50 and $16.50
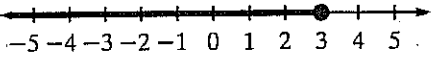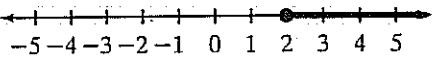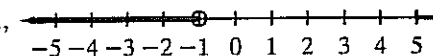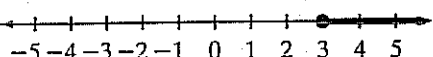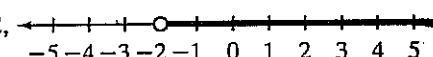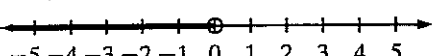18. $29 + 0.08m = 46.12$; $m = 214$ miles 19. 6
20. 100

Practice 7-4

1. $4p + 0.16 = 3.32$; $p = 0.79$; one pen costs $.79.
2. $0.10(n + 3) + 0.25n = \$1.70$; $n = 4$; Arnold
had 7 dimes and 4 quarters.
3. $3.2 + 0.17w = 5.75$; $w = 15$; she was 15 weeks
old. 4. $4(v + 6) + 18v = 134$; $v = 5$; there were
11 cars and 5 trucks.
5. $6(k + 3) = 48$; $k = 5$ 6. $c + (c + 1) = 1.10$;
$c = 0.05$; the bottle cost $1.05 and the cap costs
$.05. 7. $2\left(2 + \frac{1}{2}l + l\right) = 40$; $l = 12$; the length is
12 and the width is 8.

Practice 7-5

1. $k = 8$ 2. $e = 18$ 3. $n = -11$ 4. $x = -14$
5. $h = -5$ 6. $n = 1$ 7. $p = 8$ 8. $m = -4$
9. $y = 12$ 10. $x = -1$ 11. $k = 15$
12. $t = -4$ 13. $x = 16\frac{1}{3}$ 14. $m = -\frac{17}{2}$
15. $x = 7$ 16. $k = 6$ 17. $m = 4$ 18. $p = -9$
19. $2n - (n - 7) = 12$; $n = 5$ 20. $3n - 4$
$= 2n + 3$; $n = 7$

Practice 7-6

1. $x \leq 3$,
2. $x \geq 2$,
3. $x < -1$,
4. $x \geq 3$,
5. $x > -2$,
6. $x < 0$,
7. $x > 3$ 8. $x \leq 5$ 9. $x > 4$ 10. $x < 1$
11. $x < 5$ 12. $x < -7$ 13. $x > -45$
14. $x \leq 10$ 15. $\frac{1}{2}n + 9 \leq -8$; $n \leq -34$
16. $55h < 385$; $h < 7$; she drove less than 7 h.

Practice 7-7

1. $p = \frac{c}{1.06}$ 2. $35 3. $9.99 4. $9.39
5. $h = \frac{2A}{b}$ 6. $b = \frac{2A}{h}$ 7. 6 cm 8. 9 ft
9. $w = \frac{3V}{lh}$ 10. $c = \frac{ab}{a + b}$

Practice 7-8

1. $490.02 2. $12,410.63 3. $1,298.92
4. $71,288.04 5. $135 6. $50.55 7. $300,
$5,300; $5,300, $318, $5,618; $5,618, $337.08,
$5,955.08; $5,955.08, $357.30, $6,312.38 8. $216,
$7,416; $7,416, $222.48, $7,638.48; $7,638.48,
$229.15, $7,867.63; $7,867.63, $236.03, $8,103.66

Reteaching 7-1

1. $4n + 13 - 13 = 1 - 13$; $4n = -12$; $\frac{4n}{4} = \frac{-12}{4}$;
$n = -3$ 2. 5 3. -6 4. 28 5. -2 6. -5
7. -45