

CHAPTER 2 – LESSON 1 REVIEW

Solve Equations with Rational Coefficients

Solve each equation. Check your work.

1. $\frac{1}{2}x = 14$

$$28$$

2. $\frac{4}{7}w = 24$

$$42$$

3. $\frac{3}{8}r = \frac{15}{16}$

$$2.5$$

4. $\frac{5}{7}c = \frac{13}{14}$

$$\frac{13}{10}$$

5. $0.4t = 0.72$

$$1.8$$

6. $1.8p = 19.8$

$$11$$

7. $-\frac{5}{8}y = -\frac{1}{2}$

$$\frac{4}{5}$$

8. $\frac{13}{7}n = -\frac{13}{14}$

$$-\frac{1}{2}$$

9. $-5.2 = 0.04m$

$$-130$$

10. $-0.8g = 3.36$

$$-4.2$$

11. $-2h = -1.46$

$$0.73$$

12. $-\frac{7}{9}s = -\frac{1}{3}$

$$\frac{3}{7}$$

Define a variable. Then write and solve an equation for each situation.

13. **COOKING** Simone peeled 14 potatoes in $\frac{1}{5}$ hour. At this rate, how many potatoes can Simone peel in one hour? $P =$ number of potatoes peeled in 1 hour

$$\frac{1}{5}P = 14$$

70 potatoes

14. **VOTING** In the eighth grade, 322 students voted for the new mascot to be a tiger. This was $\frac{7}{10}$ of the total number of students in the eighth grade. How many students are in the eighth grade?

$S = \#$ of students in 8th grade

$\frac{7}{10}S = 322$ 460 students

15. **BUDGETS** Rachel budgeted \$76.50 for school clothes. This is 0.45 of her total budget. How much does Rachel have in her total budget?

$b =$ amount in total budget

$76.50 = 0.45b$ \$170.00

16. **TEMPERATURE** Overnight, the temperature dropped 1.3 degrees every hour. How many hours did it take the temperature to drop 7.8 degrees?

$h = \#$ of hours

$1.3h = 7.8$ 6 hours

CHAPTER 2 – LESSON 2 REVIEW**Solve Two-Step Equations**

Solve each equation. Check your solution.

1. $3g + 5 = 17$

(4)

2. $9 = 4a + 13$

(-1)

3. $13 = 5m - 2$

(3)

4. $-15 = 2t - 11$

(-2)

5. $7k - 5 = -19$

(-2)

6. $13 = 4x - 11$

(6)

7. $10 = \frac{z}{2} + 7$

(6)

8. $6 + \frac{n}{5} = -4$

(-50)

9. $4 - 3y = 31$

(-9)

10. $15 - 2b = -9$

(12)

11. $-\frac{1}{3}y - 6 = -11$

(15)

12. $16 - \frac{r}{7} = 21$

(-35)

13. $30 = -5d - 5$

(-7)

14. $5 + 3w = 20$

(5)

15. $5 + 8m = -11$

(-2)

16. $-18 = 9x - 9$

(-1)

17. $25 = 13 - 4s$

(-3)

18. $6a + 6 = -18$

(-4)

19. $4y + 5 = 21$

4

20. $7p - 3 = 32$

5

21. $-48 = 5v + 2$

-10

22. $\frac{k-3}{4} = 10$

43

23. $\frac{z+5}{7} = -3$

-26

24. $\frac{9+t}{12} = -3$

-45

25. **SHOPPING** Mrs. Williams shops at a store that has an annual membership fee of \$30. Today she paid her annual membership and bought several fruit baskets costing \$15 each as gifts for her coworkers. Her total was \$105. Solve the equation $15b + 30 = 105$ to find the number of fruit baskets Mrs. Williams purchased.

5 fruit baskets

26. **EXERCISE** Cole jogged the same distance on Tuesday and Friday, and 8 miles on Sunday, for a total of 20 miles for the week. Solve $2x + 8 = 20$ to find the distance Cole jogged on Tuesday and Friday.

6 miles

27. **MONEY** McKenna had \$32 when she got to the carnival. After riding 6 rides, she had \$20 left. Solve $32 - 6x = 20$ to find the price for each ride.

\$2

28. **GAMES** A card game has 50 cards. After dealing 7 cards to each player, Tupi has 15 cards left over. Solve the equation $50 - 7p = 15$ to find the number of players.

5 players

29. **CARS** It took Lisa 85 minutes to wash three cars. She spent x minutes on each car and 10 minutes putting everything away. Solve $3x + 10 = 85$ to find how long it took to wash each car.

25 minutes

CHAPTER 2 – LESSON 3 REVIEW**Write Two-Step Equations**

Translate each sentence into an equation.

1. Three more than eight times a number is equal to 19.

$$8n + 3 = 19$$

2. Twelve less than seven times a number is 16.

$$7n - 12 = 16$$

3. Four more than twice a number is -10.

$$2n + 4 = -10$$

4. Nine less than five times a number is equal to -30.

$$5n - 9 = -30$$

Define a variable. Then write and solve an equation to solve each problem.

5. **ART** Ishi bought a canvas and 8 tubes of paint for \$24.95. If the canvas cost \$6.95, how much did each tube of paint cost?

let t represent price of each tube

$$8t + 6.95 = 24.95$$

$$t = 2.25$$

\$2.25

6. **ENGINEERING** The world's two highest dams are both in Tajikistan. The Rogun dam is 35 meters taller than the Nurek dam. Together they are 635 meters tall. Find the height of the Nurek dam.

let n represent the height of the Nurek dam

$$n + n + 35 = 635$$

$$n = 300$$

300 meters

7. U.S. PRESIDENTS Use the information at the right.

President	Age at First Inauguration
J. Carter	52
R. Reagan	69
G. H. W. Bush	?
W. Clinton	46
G. W. Bush	54

- a. If you double President Reagan's age at the time of his first inauguration and subtract his age at the time he died, the result is 45 years. How old was President Reagan when he died?

d = how old President Reagan was when he died

$$2(69) - d = 45 \quad \text{93 years old}$$

$$d = 93$$

- b. If you divide the age of the first President Bush when he was inaugurated by 2 and add 14 years, you get the age of President Clinton when he was first inaugurated. How old was President G. H. W. Bush when he was inaugurated?

a = age of President G.H.W. Bush

$$\frac{a}{2} + 14 = 46 \quad a = 64$$

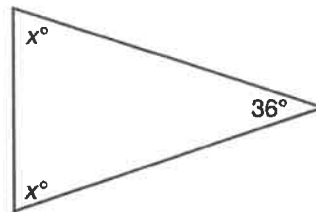
$$\text{64 years old}$$

- 8. GEOMETRY** Triangles angles always add up to 180°. Find the value of x in the triangle at the right.

$$36 + 2x = 180$$

$$x = 72$$

$$\text{72}^\circ$$



- 9. ALGEBRA** Three consecutive integers can be represented by n , $n + 1$, and $n + 2$. If the sum of three consecutive integers is 57, what are the integers?

$$n + n + 1 + n + 2 = 57$$

$$n = 18$$

Sides 18, 19, 20 lengths

CHAPTER 2 – LESSON 4 REVIEW***Solve Equations with Variables on Each Side***

Solve each equation. Check your solution.

1. $9m + 14 = 2m$

$$-2$$

2. $13x = 32 + 5x$

$$4$$

3. $8d - 25 = 3d$

$$5$$

4. $t - 27 = 4t$

$$-9$$

5. $7p - 5 = 6p + 8$

$$13$$

6. $11z - 5 = 9z + 7$

$$6$$

7. $12 - 5h = h + 6$

$$1$$

8. $4 - 7f = f - 12$

$$2$$

9. $-6y + 17 = 3y - 10$

$$3$$

10. $3x - 32 = -7x + 28$

$$6$$

11. $3.2a - 16 = 4a$

$$-20$$

12. $16.8 - v = 6v$

$$2.4$$

Define a variable, write an equation, and solve to find each number.

13. Fourteen less than five times a number is three times the number.

$$5x - 14 = 3x$$

$$x = 7$$

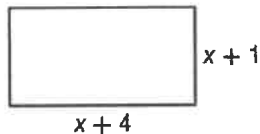
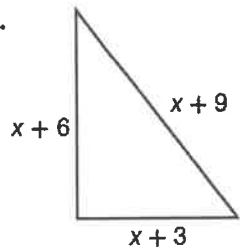
14. Twelve more than seven times a number equals the number less six.

$$7x + 12 = x - 6$$

$$x = -3$$

Write an equation to find the value of x so that each pair of polygons has the same perimeter. Then solve.

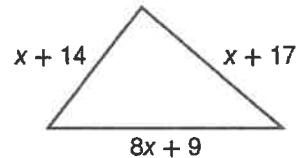
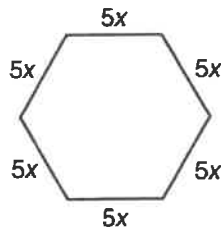
15.



$$3x + 18 = 4x + 10$$

$$x = 8$$

16.



$$30x = 10x + 40$$

$$x = 2$$

Write and solve an equation to solve each exercise.

17. **GOLF** For an annual membership fee of \$500, Mr. Bailey can join a country club that would allow him to play a round of golf for \$35. Without the membership, the country club charges \$55 for each round of golf. How many rounds of golf would Mr. Bailey have to play for the cost to be the same with and without a membership?

$$35r + 500 = 55r$$

$$r = 25$$

$$25 \text{ rounds}$$

18. **MUSIC** Marc has 45 CDs in his collection, and Corinna has 61. If Marc buys 4 new CDs each month and Corinna buys 2 new CDs each month, after how many months will Marc and Corinna have the same number of CDs?

$$45 + 4m = 61 + 2m$$

$$m = 8$$

$$8 \text{ months}$$

CHAPTER 2 – LESSON 5 REVIEW**Solve Multi-Step Equations**

Solve each equation. Check your solution.

1. $5(x - 3) + 2x = 41$

$x = 8$

2. $4a - 3(a - 2) = 2(3a - 2)$

$a = 2$

3. $(7t - 2) - (-3t + 1) = -3(1 - 3t)$

$t = 0$

4. $14 - 2(3p + 1) = 6(4 + p)$

$p = -1$

5. $\frac{2}{7}(14q + \frac{7}{2}) - 3q = 9$

$q = 8$

6. $x - (4x - 7) = 5x - (x + 21)$

$x = 4$

7. **BACKPACKING** Guido and Raoul each went backpacking in Glacier National Park. The expressions $4(d + 2) - 2d$ and $3(2 + d)$ represent the respective distances Guido and Raoul hiked each day. On what day number d will their distance hiking be the same?

 $Day 2$

8. SAVINGS The table at the right shows the savings account balance of each of the Alvarez siblings.

- a. Write an equation to find the amount of money in Petros's account if the total of all of their accounts is \$148.

$$s + 2(s + 3) + 4s - 5 = 148$$

Sibling	Account Balance
Cindy	s
Petros	$2(s + 3)$
Nila	$4s - 5$

- b. Solve the equation from part a to find the amount of money in Petros's account.

\$48

9. LAWNS Luisa mows lawns during the summer. She charges \$15 if she cuts the grass but charges \$5 more if she also trims the grass. Last week she trimmed 5 more yards than she cut. If she made \$415 last week, how many yards did she trim?

14 yards