

Chapter 2 HW

Lessons 2-1 through 2-5

Solve each equation. Check your answer.

1. $9g + 12 = 84$

2. $\frac{1}{4}(z+2) = \frac{3}{4}$

3. $n + 11.2 = 25.1$

4. $8x - 12 = 4x + 24$

5. $\frac{1}{5}(x-8) = x-16$

$$\frac{1}{5}(x-8) = \frac{5}{4}(18)$$

$$2 = 15$$

Solve each equation. Justify your steps.

7. $8 + 6m = 26$

8. $-6 = \frac{1}{5}y - 1$

Solve each equation. If the equation is an identity, write *identity*. If it has no real-number solution, write *no solution*.

9. $\frac{1}{3}(6x-12) = 4\left(\frac{1}{2}x+1\right) - 2$

10. $\frac{p-6}{2} = p-4$

11. $2.6(t+2) = 2(1.3t+2) + 1.2$

12. $2x + 4 = 5(x+1) - 3(x+2)$

13. Jackie earns \$172 per week at her part time job. She is saving this money to buy a used car that costs \$2000. At this rate, how many weeks will it take her to earn enough money to buy the car?

Solve each equation for the given variable.

14. $-3b + ac = c - 4$ for c

15. $\frac{x}{y} + 4 = \frac{z}{5}$ for x

Answers:

1. $9g + 12 = 84; g = 8$ 2. $\frac{1}{4}(z+2) = \frac{3}{4}; z = 1$ 3. $n + 11.2 = 25.1; n = 13.9$

4. $8x - 12 = 4x + 24; x = 9$ 5. $\frac{1}{5}(x-8) = x-16; x = 18$ 6. $\frac{x-4}{6} = \frac{5}{4}; x = 11.5$

7. $8 + 6m = 26$

$(8 + 6m) + -8 = 26 + -8$ add of eq
 $(6m + 8) + -8 = 26 + -8$ comm of add
 $6m + (8 + -8) = 26 + -8$ assoc of add
 $6m + 0 = 26 + -8$ inverse of add
 $6m = 26 + -8$ identity of add
 $6m = 18$ sub
 $6m/6 = 18/6$ div of eq
 $6m/6 = 3$ sub
 $6m * 1/6 = 3$ def of div
 $1/6 * 6m = 3$ comm of mult
 $(1/6 * 6)m = 3$ assoc of mult
 $1m = 3$ inverse of mult
 $M = 3$ identity of mult

8. $-6 = \frac{1}{5}y - 1$

$-6 + 1 = (1/5y - 1) + 1$ add of eq
 $-5 = (1/5y - 1) + 1$ sub
 $-5 = (1/5y + -1) + 1$ def of sub
 $-5 = 1/5y + (-1 + 1)$ assoc of add
 $-5 = 1/5y + 0$ inverse of add
 $-5 = 1/5y$ identity add
 $-5 * 5 = 1/5y * 5$ mult of eq
 $-25 = 1/5y * 5$ sub
 $-25 = 5 * 1/5y$ comm of mult
 $-25 = (5 * 1/5)y$ assoc mult
 $-25 = 1y$ inverse mult
 $-25 = y$ identity mult
 $y = -25$ symmetric of eq

9. $\frac{1}{3}(6x-12) = 4\left(\frac{1}{2}x+1\right) - 2$

No solution

10. $\frac{p-6}{2} = p-4$

p = 2

11. $2.6(t+2) = 2(1.3t+2) + 1.2$

Identity; infinite solutions

12. $2x + 4 = 5(x + 1) - 3(x + 2)$

No solution

13. Jackie earns \$172 per week at her part time job. She is saving this money to buy a used car that costs \$2000. At this rate, how many weeks will it take her to earn enough money to buy the car?

x = number of weeks

$172x = 2000$ 12 weeks

14. $-3b + ac = c - 4$ for c

$c = (3b - 4)/(a - 1)$

15. $\frac{x}{y} + 4 = \frac{z}{5}$ for x

$x = yz/5 - 4y$

Name _____

Chapter 2 HW

Lessons 2-1 through 2-5

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

16. A large cheese pizza costs \$7.50. Each additional topping for the pizza costs \$1.35. If the total bill for the pizza Sally ordered was \$12.90, how many toppings did she order?
17. A water park offers a season pass for \$64 per person which includes free admission and free parking. Admission for the water park is \$14.50 per person. Parking is normally \$5 for those without a season pass.
- How many visits to the water park would you have to use for the season pass to be a better deal?
 - What would the total cost be for 3 visits with and without a season pass?
18. The length of a rectangle is twice the width. The perimeter is 36 ft. What are the length and the width of the rectangle?
19. The sum of two consecutive odd integers is 80. What are the integers?
20. **Writing** Describe the steps that are involved in solving the equation
- $$9 = 6 + \frac{z - 8}{4}.$$
21. **Open-Ended** Write a multi-step equation for each condition listed below.
- equation has no solution
 - equation has one solution
 - equation is an identity

Answers:

16. A large cheese pizza costs \$7.50. Each additional topping for the pizza costs \$1.35. If the total bill for the pizza Sally ordered was \$12.90, how many toppings did she order?

$$x = \# \text{ toppings} \quad 7.50 + 1.35x = 12.90 \quad x = 4 \text{ toppings}$$

17. A water park offers a season pass for \$64 per person which includes free admission and free parking. Admission for the water park is \$14.50 per person. Parking is normally \$5 for those without a season pass.
- How many visits to the water park would you have to use for the season pass to be a better deal?
 - What would the total cost be for 3 visits with and without a season pass?

$$X = \# \text{ visits} \quad 64 = 14.5x + 5x \quad \text{a) 4 visits} \quad \text{b) \$64 with \& \$58.50 without}$$

18. The length of a rectangle is twice the width. The perimeter of the rectangle is 36 ft. What are the length and the width of the rectangle?

$$x = \text{width}; 2x = \text{length} \quad 2x + 2(2x) = 36 \quad 6 \text{ ft x } 12 \text{ ft rectangle}$$

19. The sum of two consecutive odd integers is 80. What are the integers?

$$n = \text{smaller integer}; n + 2 = \text{larger integer} \quad n + n + 2 = 80 \quad 39 \& 41$$

- c. **Writing** Describe the steps that are involved in solving the equation

$$9 = 6 + \frac{z-8}{4}$$

$$x \ 4 \quad x \ 4 \quad \text{multiply both sides by 4}$$

$$36 = 24 + z - 8 \quad \text{distribute}$$

$$36 = 16 + z \quad \text{simplify}$$

$$36 - 16 = 16 + z - 16 \quad \text{move constants}$$

$$20 = z \quad \text{simplify}$$

20. **Open-Ended** Write a multi-step equation for each condition listed below.

a. equation has no solution – **same coefficient of variable; different constants on both sides of equation**

b. equation has one solution – **different coefficient of variable**

c. equation is an identity - **same coefficient of variable; same constant on both sides of equation**