

1.1 Combining, Distributive & Solving NOTES

Simplify the expression by **COMBINING LIKE TERMS**
(Terms with the same variable and the same exponents are **LIKE TERMS**. Ex: $2x$ & $-x$)
When you **COMBINE** terms, you are **ADDING** them.

1. $-6x + 10x + 3y$

$$4x + 3y$$

2. $2 - 4y - 14y$

$$2 - 18y$$

Use the **Distributive Property** to simplify the expression.
(Multiply every term inside the parenthesis by the term directly outside the parenthesis)
When you **DISTRIBUTE** terms, you are **MULTIPLYING** them.

3. $5(g + 4)$

$$5g + 20$$

4. $4(-z + 3 - 2w)$

$$-4z + 12 - 8w$$

Distribute and simplify the expression.

5. $(-3n + 4) + (n + 11)$

$$-2n + 15$$

6. $(10z + 8) - (2z - 6)$

$$8z + 14$$

7. $3b - (-6b + 1)$

$$3b + 6b - 1$$

$$9b - 1$$

Write an equation to find the number.

8. The sum of four times a number and 7 is 15.

$$4x + 7 = 15$$

9. Two times the difference of three and a number is -10

$$2(3 + x) = -10$$

SOLVING: Simplify (distribute, combine) then **Box** variable, Cancel what is beside box, Cancel what is inside box.

Solve the equation.

10. $4(x - 1) = 8$

$$4x - 4 = 8$$

$$4x = 12$$

$$x = 3$$

11. $5x + 2 + x = 14$

$$6x + 2 = 14$$

$$6x = 12$$

$$x = 2$$

12. $7x - 1 = 2x + 4$

1.1 Combining, Distributive & Solving

Simplify the expression.

1. $7x + 15x$

2. $8y - 14y$

3. $7d + 9 - 5d$

Use the Distributive Property to simplify the expression.

4. $8(y + 3)$

5. $5(m + 3 + n)$

6. $4(2p + 4q + 6)$

Distribute and simplify the expression.

7. $(-7n + 6) + (5n + 15)$

8. $(9z + 12) - (6z + 8)$

9. $(8b + 1) - (-10b - 5)$

Write an equation to find the number.

10. The difference of three times a number and 1 is 8.

11. The sum of 5 and four times a number is -11.

12. Two times the sum of a number and 3 is -14.

Solve the equation.

13. $y - 4 = 2$

14. $4g = 36$

15. $\frac{y}{2} = 15$

16. $18x - 14 = -14$

17. $-\frac{2}{3}w = 14$

18. $3g + 5 = 20$

19. $13 = 7 - w$

20. $10 - m = -3$

21. $\frac{x}{7} - 10 = -8$

22. $24 = 11w - 5w$

23. $8x - 3 - 2x = 21$

24. A mechanic charges \$43 per hour for labor and \$217 for parts. The total bill is \$518.
 a. Write an equation to find the hours, x , that the mechanic worked.
 b. Solve to find how many hours the mechanic worked.

Solve the equation.

25. $4(n - 3) = 24$

26. $-10 - 4 = 3b + 4$

27. $60 = 4(-6r - 3)$

Answer Bank for #13 - #27: All answers will be used once and only once.

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|---|---|---|---|----|---|---|-----|----|----|
| 4 | 5 | 7 | 9 | -6 | 6 | 0 | -21 | -3 | 30 |
|---|---|---|---|----|---|---|-----|----|----|