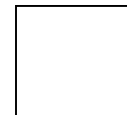


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Homework 4: Order of Operations



Directions: Evaluate each expression using the order of operations.

1. $17 - 5 \cdot 4 \div 2$

2. $40 - 32 \div 8 + 5 \cdot -2$

3. $35 - 14 \div 2 + 8^2$

4. $(4 - 7)^2 - 6 \cdot 7 + 20$

5. $2[18 - (5 + 3^2) \div 7]$

6. $[(-5 + 1) \div 2]^3 - |-7|$

7. $1 + (-2 - 5)^2 + -3 \cdot 4$

8. $\frac{6(2 + 4) - 1}{2 \cdot 3 + 1}$

9. $\frac{2^5 \div 8 + 3}{4 + 3}$

10. $\frac{17 \cdot 5 - 3 \cdot 5}{3^2 + 1}$

11. $\frac{13 + 7^2 \div 7}{9 - 20 \div 4 + 16}$

12. $-|-16| \div \frac{(3^2 - 4)}{5 - 10}$

EVALUATING EXPRESSIONS

Substitution Property: If $a = b$, then a may be replaced for b in any expression.

Example: Evaluate $ab^2 + c$ when $a = 2$, $b = 4$, and $c = 7$

THE MOST IMPORTANT RULE IN ALGEBRA:

Put _____ around _____
when substituting them into an expression!

Example: Evaluate $3x^2 - 4x$ when $x = -2$

More Examples:

1 $a^2b - b^2$ when $a = 3$ and $b = -4$

2 $a^2b - b^2$ when $a = 4$ and $b = -7$

3 $-y^2 - 3xy$ when $x = -4$ and $y = 2$

4 $-y^2 - 3xy$ when $x = -5$ and $y = -3$

5 $\frac{a^2 + b^2}{a - b}$ when $a = 3$ and $b = 4$

6 $\frac{a^2 + b^2}{a - b}$ when $a = -3$ and $b = -5$

7 $x^2 - 2(x - y) - z^3$

a. when $x = 2$, $y = -2$, and $z = -3$

b. when $x = -3$, $y = 4$ and $z = -1$

8 $-a^2 - 2bc - c^2$

a. when $a = -2$, $b = 3$, and $c = -3$

b. when $a = -3$, $b = -5$, and $c = 2$

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Homework 5: Evaluating Expressions



Directions: Evaluate each expression for the given variable values.

1. $n^2 - 3n + 8$

if $n = 4$

2. $\frac{x^2 - 4y}{2}$

if $x = 4, y = -3$

3. $4|m - n|$

if $m = 6$ and $n = 8$

4. x^2

if $x = -5$

5. $s^2t - 10$

if $s = -2, t = 10$

6. $4p^2 + 7q^3$

if $p = -3, q = -2$

7. $(a + b)^2$

if $a = 6, b = -8$

8. $5x^2 - y^2$

if $x = -1, y = -4$

9. $a^2 - b^2 + 3c$

if $a = -9, b = -6, c = -20$

10. $3|x + y|^2$

if $x = 5, y = -10$

11. $2x^2 - 5xy - y^3$

if $x = -3, y = -2$

12. $-a^2 + 7b^4 - 2c^3$

if $a = -4, b = -2, c = -3$

Part III**Evaluating Expressions.** If $w = -1$, $x = 6$, and $y = -3$, find the following:

12. $2y - 5w$

13. $-4x + y^2$

14. $3w^2 - 5w + 1$

15. $2|y| - x^2$

Answers


12. _____

13. _____

14. _____

15. _____

B. $7[4^2 - 6|5 + (2^3 - 18) + 16 \div 8|]$

Show all steps to receive credit!

Take it slow and
you'll get it!

COMBINING LIKE TERMS

$$7x + 3 - 5x + 8 + 4x - 1$$

Variable Terms

(Terms WITH a variable)

Constant Terms

(Terms WITHOUT a variable)

Coefficients

(Number NEXT TO A variable)

You can simplify an expression by combining like terms!

$$7x + 3 - 5x + 8 + 4x - 1 = \underline{\hspace{2cm}}$$

1. $3x + 6x$

2. $9a - 10a$

3. $7m - 5m - 6$

4. $9 - 6x + 5$

5. $7p - 1 - 9p + 5$

6. $5h - 6 - 8 + 7h$

7. $5x^2 + 7x^2$

8. $5x + 7y - x + 2y + 3x$

9. $26x + 2y - 4x + 10y$

10. $8x^3 - 7x^3 + 16x^3$

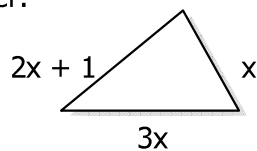
11. $-4a^2b + 7 + 10a^2b$

12. $x^2 + 2xy - 7xy + 4y^2$

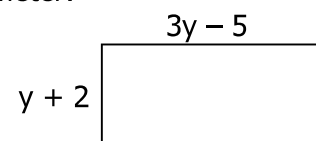
13. $a^2 + 7ab - 10ab + b^2$

14. $4x^2 + 2x - 3x^2 + 8x$

15. Find the perimeter:



16. Find the perimeter:

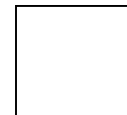


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Homework 7: Combining Like Terms



Directions: Simplify each expression by combining like terms.

1. $8y - 9y$

2. $3x - 7x + 1$

3. $8a - 6 + a - 1$

4. $-2y + 14 - 9y + 5$

5. $-x - 2 + 15x$

6. $-7w - 5 - 7w + 9$

7. $8d - 4 - d - 2$

8. $40 - 9x + 4x + 5$

9. $9a + 8 - 2a - 3 - 5a$

10. $4xy - 6xy + 5y - 9x$

11. $7x + 2y + 5 - 5x + 9y - 1$

12. $-5f - 7g + f - 5g - 4 + f$

13. $-6 + 3a - b - 4a + 4b + 5$

14. $6n^2 - 2n - 3 + 5n^2 - 9n - 6$

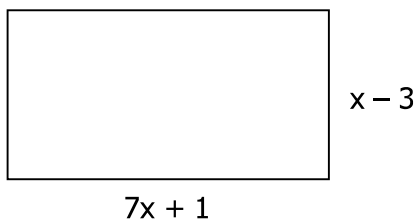
15. $8c^2 - c + 3 + 2c^2 - c + 2$

16. $-12x^2y - 3x^2y$

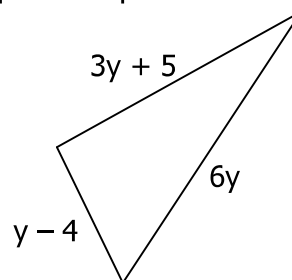
17. $6a^2b^2 + 3ab^2 - a^2b^2 - 4ab^2$

18. $19x^2y - 4xy^2 + 5xy^2 - 16x^2y$

19. Write the perimeter of the rectangle as a simplified expression.



20. Write the perimeter of the triangle as a simplified expression.



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Class:

Topic:

Date:

Main Ideas/Questions	Notes		
<p style="text-align: center;">THE DISTRIBUTIVE PROPERTY</p> <p>$a(b + c) = ab + ac$</p>	1. $7(x + 4)$	2. $2(b - 3)$	3. $-4(y + 3)$
	4. $-5(m - 2)$	5. $-(y - 9)$	6. $8(-b + 4)$
	7. $-4(-w - 10)$	8. $5(2m - 3)$	9. $-3(2x - 4)$
	10. $3(m + n)$	11. $x(y + 4)$	12. $d(c - 4)$
	13. $6a(b + 2c)$	14. $2(x - y + 8)$	15. $x(2y - 5z + 1)$
	16. $\frac{1}{4}(8x - 4)$	17. $\frac{1}{6}\left(\frac{3}{5}x + 18\right)$	18. $-\frac{1}{8}\left(\frac{4}{5}x - 24\right)$
<p>Put it all together...</p> <p style="text-align: center;">DISTRIBUTE & Combine Like Terms!</p>	1. $8(2x - 3) - 6x$	2. $9(2k - 4) - 2(7k - 12)$	
	3. $10 - (y - 6) - y$	4. $6 + 8(4w - 7) - (2w + 1)$	
	5. $\frac{9}{4}\left(\frac{10}{3}x - 4\right) - \frac{1}{4}(2x - 8)$	7. $\frac{7}{8}\left(\frac{4}{5}x + 16\right) + \frac{3}{5}\left(\frac{1}{2}x - 10\right)$	

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Homework 8: Simplifying Expressions



Directions: Simplify each expression by distributing.

1. $8(x + 5) =$ _____

2. $3(2y - 7) =$ _____

3. $-2(3m + 9) =$ _____

4. $-6(z - 1) =$ _____

5. $-(5x + 1) =$ _____

6. $-(x + 4) =$ _____

7. $b(a - 6) =$ _____

8. $7a(3b - 2c + 4) =$ _____

9. $\frac{1}{2}(8x + 2) =$ _____

10. $\frac{2}{3}\left(\frac{1}{4}x - 6\right) =$ _____

Directions: Simplify each expression by distributing and combining like terms

11. $-7(w - 4) + 3w - 27$

12. $6(x + 1) - 5(x + 2)$

13. $-5(x + 6) + 7(x - 4)$

14. $8(x + 5) - 4(x + 4)$

15. $-9(x + 2) + 4(x - 6)$

16. $8(x - 6) - 2(x - 2)$

17. $-4(x + 8) - (x - 7)$

18. $6(x + 6) - (x - 6)$

19. $21 - 8(v + 3) + 3 + 7v$

20. $\frac{1}{2}\left(\frac{3}{5}x - 8\right) + \frac{7}{4}\left(\frac{2}{5}x + 4\right)$

TRANSLATING

<p>ADDITION +</p> <ul style="list-style-type: none"> ▪ _____ ▪ _____ ▪ _____ ▪ _____ ▪ _____ 	<p>SUBTRACTION -</p> <ul style="list-style-type: none"> ▪ _____ ▪ _____ ▪ _____ ▪ _____ ▪ _____
<p>MULTIPLICATION •</p> <ul style="list-style-type: none"> ▪ _____ ▪ _____ ▪ _____ ▪ _____ ▪ _____ 	<p>DIVISION /</p> <ul style="list-style-type: none"> ▪ _____ ▪ _____ ▪ _____ ▪ _____ ▪ _____

(Parentheses Words)

- _____
- _____

Turn Around Words

- _____
- _____



Examples!

<p>1. "The product of a number and 3"</p>	<p>2. "The difference of a number and 10"</p>
<p>3. The quotient of a number and -5"</p>	<p>4. "Four subtracted from a number"</p>

5. "The sum of twice a number and 7"	6. "The product of a number and 10, increased by 1"
7. "Four less than a number squared"	8. "Twice a number divided by 5"
9. "The sum of twice a number and 10 is 36"	10. "Three times the difference of a number and 7 is 18"
11. "Four times a number divided by 8 is 3"	12. "Five times the sum of a number and 6 is 48"
13. "One half of a number is 8 less than the number itself"	14. "The product of a number and 3 is the same as the sum of that number and six"
15. "Fifteen decreased by the quotient of a number and 3 is 20"	16. "Four less than the product of a number and 7 is eight more than that number"

Inequalities

LESS THAN	LESS THAN OR EQUAL TO	GREATER THAN	GREATER THAN OR EQUAL TO

1. "A number is less than -10"	2. "A number is less than or equal to 8"
3. "A number is greater than or equal to -4"	4. "A number is at most 45"
5. "A speed limit of 55 mph"	6. "A number is at least 16"
7. "A number is no less than 10"	8. "A number is no more than 26"
9. "A maximum number of 25"	10. "A minimum number of 5"

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Homework 9: Translating Expressions
Equations, & Inequalities

Directions: Translate each expression.	
1. "The sum of a number and 4."	2. "The quotient of a number and -2."
3. "The product of a number and 5."	4. "The difference of a number and 7."
5. "A number squared increased by 1"	6. "Three less than twice a number"

Directions: Translate each equation. <i>DO NOT SOLVE!</i>	
7. "Twice a number divided by 6 is 42."	8. "Two times the sum of number and 5 is 20"
9. "Four times the difference of a number and 7 is 32"	10. "One third of a number is 12 less than the number itself"
11. "Ten increased by the quotient of a number and 2 is -15"	12. "One less than the product of a number and 3 is 5 more than the number itself"

Directions: Translate each inequality.	
13. "A number is less than 15"	14. "A number is greater than or equal to -3"
15. "A number that is at least 90"	16. "A speed limit of 65 mph"
17. "A number that is no more than 20"	18. "A maximum number of 50"
19. "A minimum number of 10"	20. "A number that is no less than 25"