Algebra 1 Workbook Solutions

Operations

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VARIABLES

1. Which value can we identify as the variable in the expression?

$$3y^2 + ay - 6 = 1$$

Solution:

Variables are usually represented by letters at the end of the alphabet, so y is the variable in this equation. The letter a represents a constant coefficient.

2. Identify any constant(s) in the equation.

$$x^2 - 3x + 2 = 0$$

Solution:

The equation includes two constants, the 2 on the left and the 0 on the right. A constant is any real number that doesn't have a variable attached to it.

3. How many terms exist in the equation?

$$x^2 - 3x + 2 = 0$$

Solution:

A term is a single number or a variable, or numbers and variables multiplied together, so there are four terms in the equation, x^2, $3x$, 2, and 0.

4. Identify any coefficient(s) in the expression.

$$2x^2 + bx - c$$

Solution:

Coefficients are numbers attached to variables, or numbers that multiply variables. In this expression, 2 is a coefficient on x^2, and b is a coefficient on x. The constant c is not a coefficient, because it's not multiplying a variable.

5. Which value is the variable representing?

$$x - 7 = 2$$

Solution:

To determine the value of x, we need to figure out which number, when we take away 7, gives a result of 2, so $x=9$. The value $x=9$ is the value that makes the equation true.

$$x-7=2$$

$$9-7=2$$

$$2=2$$

6. Which value is the variable representing?

$$y+3=8$$

Solution:

To determine the value of y, we need to figure out which number can be added to 3 to get 8, so $y=5$. The value $y=5$ is the value that makes the equation true.

$$y+3=8$$

$$5+3=8$$

$$8=8$$

IDENTIFYING MULTIPLICATION

1. Give three different examples of how we can write "a times b" mathematically.

Solution:

We can write the product of a and b as $a \times b$, $a \cdot b$, $(a)(b)$, or ab.

2. Simplify the expression.

$$5(2 \cdot 3) \times (1)(a)$$

Solution:

When all these values are multiplied together, the order in which we perform the multiplication won't affect the result.

$$5(6) \times (1)(a)$$

$$5(6) \times a$$

$$30 \times a$$

$$30a$$

3. Find the value of the expression.

$$4 \times 3(1)(2 \cdot 1)$$

Solution:

When all these values are multiplied together, the order in which we perform the multiplication won't affect the result.

$$4 \times 3(1)(2)$$

$$4 \times 3(2)$$

$$4 \times 6$$

$$24$$

4. Find the value of the expression.

$$2(4)(3 \cdot 4) \times (5)(2)$$

Solution:

When all these values are multiplied together, the order in which we perform the multiplication won't affect the result.

$$2(4)(12) \times (5)(2)$$

$$8(12) \times (5)(2)$$

$$96 \times (5)(2)$$

$$96 \times 10$$

$$960$$

5. Why do we have different ways to write multiplication?

Solution:

Because the "times" symbol, $\times$, can be confused with x.

6. Simplify the expression.

$$(-3)(2) \times 4 \cdot (-2)(2 \cdot 1)$$

Solution:

When all these values are multiplied together, the order in which we perform the multiplication won't affect the result.

$$(-6) \times 4 \cdot (-2)(2 \cdot 1)$$

$$(-6) \times 4 \cdot (-2)(2)$$

$$(-24) \cdot (-2)(2)$$

$$(-24) \cdot (-4)$$

$$96$$

ASSOCIATIVE PROPERTY

1. Give an example of an expression that demonstrates the Associative Property of Multiplication.

Solution:

There are many correct answers. For example, the following all work:

$$2 \times (11 \times 3) = (2 \times 11) \times 3$$

$$2 \times (11 \times 3) \times 9 = (2 \times 11) \times 3 \times 9 = 2 \times 11 \times (3 \times 9)$$

However, this example does not work:

$$2 \times (11 + 3) = (2 \times 11) + 3$$

Parentheses can't be associated when the parentheses involve both addition and multiplication.

2. Using the Associative Property, rewrite and simplify $2 \times (3 \times 4)$.

Solution:

Move the parentheses to associate a different pair of constants.

$$(2 \times 3) \times 4$$

$$6 \times 4$$

$$24$$

3. According to the Associative Property, what number would make the most sense in the place of the variable?

$$42 + (31 + 17) = (42 + x) + 17$$

Solution:

The Associative Property tells us that we can associate different values in the expression and still keep the value the same.

On the left side of the equation, we're associating 31 and 17, but we can equivalently associate 42 and 31. So the missing value is $x = 31$.

4. Rearrange $(3 + 6) + 2$ using the Associative Property, then simplify.

Solution:

We'll use the Associative Property to associate $6 + 2$ instead of $3 + 6$, then we'll simplify.

$$3 + (6 + 2)$$

$$3 + 8$$

$$11$$

5. Give an example of an expression that demonstrates the Associative Property of Addition.

Solution:

There are many correct answers. For example, the following all work:

$$2 + (11 + 3) = (2 + 11) + 3$$

$$2 + (11 + 3) + 9 = (2 + 11) + 3 + 9 = 2 + 11 + (3 + 9)$$

However, this example does not work:

$$2 + (11 \times 3) = (2 + 11) \times 3$$

Parentheses can't be associated when the parentheses involve both addition and multiplication.

6. According to the Associative Property, what number would make the most sense in the place of the variable?

$$(4 \times 2) \times 9 = x \times (2 \times 9)$$

Solution:

The Associative Property tells us that we can associate different values in the expression and still keep the value the same.

On the left side of the equation, we're associating 4 and 2, but we can equivalently associate 4 and 9. So the missing value is $x = 4$.

COMMUTATIVE PROPERTY

1. Using the Commutative Property, rewrite $6 + 19$ and then simplify.

Solution:

The Commutative Property lets us swap the order of terms being added.

$$19 + 6$$

$$25$$

2. Give an example of an expression that demonstrates the Commutative Property of Multiplication.

Solution:

There are many correct answers. For example, the following all work:

$$11 \times 3 = 3 \times 11$$

$$2 \times (11 \times 3) = 2 \times (3 \times 11) = (11 \times 3) \times 2$$

However, these examples do not work:

$$3 - 4 = 4 - 3$$

$$3 \div 4 = 4 \div 3$$

The Commutative Property can't be used with subtraction and division.

3. According to the Commutative Property, what's the value of the variable in the equation?

$$11 + (23 + 6) = 11 + (6 + x)$$

Solution:

The Commutative Property tells us that we can change the order of the terms in a sum. In this equation, the order of the terms has changed, but the terms themselves need to stay the same, so the missing value must be $x = 23$.

4. Rearrange $(3 + 6) + 2$ using the Commutative Property and then the Associative Property.

Solution:

The Commutative Property lets us rearrange the order of the terms in the sum,

$$(6 + 3) + 2$$

and then the Associative Property lets us associate different terms in the sum.

$$6 + (3 + 2)$$

5. Give an example of an expression that demonstrates the Commutative Property of Addition.

Solution:

There are many correct answers. For example, the following all work:

$$11 + 3 = 3 + 11$$

$$2 + (11 + 3) = 2 + (3 + 11) = (11 + 3) + 2$$

However, these examples do not work:

$$3 - 4 = 4 - 3$$

$$3 \div 4 = 4 \div 3$$

The Commutative Property can't be used with subtraction and division.

6. According to the Commutative Property, what's the value of the variable in the equation?

$$(4 \times 2) \times 9 = (x \times 9) \times 4$$

Solution:

The Commutative Property tells us that we can change the order of the terms in a product. In this equation, the order of the terms has changed, but the terms themselves need to stay the same, so the missing value must be $x = 2$.

TRANSITIVE PROPERTY

1. If $AB = CD$ and $CD = EF$, what's another way to express EF?

Solution:

Because both AB and EF are equal to the same value, CD, we know they're also equal to each other.

$$EF = AB$$

2. According to the Transitive Property, if $x = 2y$ and $2y = 5z$, what's the value of x?

Solution:

Because both x and $5z$ are equal to the same value, $2y$, we know they're also equal to each other.

$$x = 5z$$

3. Give an example that demonstrates the Transitive Property.

Solution:

There are many correct answers. For example, the following all work:

If $x = 2$ and $y = x$ then $y = 2$.

If $z = x$ and $x = 2y$ then $z = 2y$.

However, this example does not work:

If $x = y$ and $z = 2$ then $x = 2$.

The Transitive Property can't be used when the equation statements aren't related to each another.

4. By the Transitive Property, what value would make the statement true?

If $2 + 3 = x$ and $4 + 1 = 5$, then $2 + 3 = 5$.

Solution:

If the conclusion is that $2 + 3 = 5$, then we need two other statements showing that both $2 + 3$ and 5 are equal to the same value. We're told that 5 is equal to $4 + 1$, which means we need to say that $2 + 3$ is also equal to $4 + 1$.

$$x = 4 + 1$$

5. Use the Transitive Property to write an equation that only includes x variables, without any y or z variables.

$$y = 2x + 3$$

$$y = z$$

$$z = 5x - 9$$

Solution:

We know that $y = 2x + 3$ and $y = z$, so we have two different values that are both equal to y, and we can use the Transitive Property to set those values equal to each other.

$$z = 2x + 3$$

Now we know that $z = 2x + 3$ and $z = 5x - 9$, so we have two different values that are both equal to z, and we can use the Transitive Property to set those values equal to each other.

$$2x + 3 = 5x - 9$$

6. According to the Transitive Property, what expression would make the most sense in the following statement?

If $x = 2y$ and $2y = ??$, then $x = 5z$.

Solution:

If the conclusion is that $x = 5z$, then we need two other statements showing that both x and $5z$ are equal to the same value. We're told that x is equal to $2y$, which means we need to say that $5z$ is also equal to $2y$.

$$?? = 5z$$

UNDERSTOOD 1

1. What happens when we multiply something by 1?

Solution:

Its value stays the same.

2. Simplify the expression.

$$\frac{1x^1}{1(1^1)}+\frac{1}{1(1x)}-1^1$$

Solution:

Remove all the “understood 1s” from the first term,

$$\frac{1x^1}{1(1^1)}+\frac{1}{1(1x)}-1^1$$

$$x+\frac{1}{1(1x)}-1^1$$

then from the second term,

$$x+\frac{1}{x}-1^1$$

and then from the third term.

$$x + \frac{1}{x} - 1$$

3. What value of x makes the equation true?

$$1(2^1) - \frac{1}{1(1)^1} + \frac{x^1}{1 \times 1} = 4$$

Solution:

Remove all the "understood 1s" from the first term,

$$2 - \frac{1}{1(1)^1} + \frac{x^1}{1 \times 1} = 4$$

then from the second term,

$$2 - 1 + \frac{x^1}{1 \times 1} = 4$$

and then from the third term.

$$2 - 1 + x = 4$$

$$1 + x = 4$$

The only value that x can take is $x = 3$, because $1 + 3 = 4$.

4. Simplify the expression by removing any "understood 1s."

$$\frac{x^1}{4x^3} + \frac{5x^4}{1x}$$

Solution:

Remove the "understood 1s."

$$\frac{x}{4x^3} + \frac{5x^4}{x}$$

5. What happens when we divide something by 1?

Solution:

Its value stays the same.

6. Simplify the expression by removing any "understood 1s."

$$\frac{x}{1^1} \cdot \frac{x^2 + 1(1)}{5x^2}$$

Solution:

Remove all the "understood 1s" from the first term,

$$x \cdot \frac{x^2 + 1(1)}{5x^2}$$

then from the second term.

$$x \cdot \frac{x^2 + 1}{5x^2}$$

ADDING AND SUBTRACTING LIKE TERMS

1. Give an example of like terms that can added.

Solution:

There are many correct answers. Some examples include

$3x^2$ and $-5x^2$

$-x^3$ and $2x^3$

We can't add terms unless they have the same base and same exponent. The following are pairs of terms that can't be added.

x^2 and x^4

t^2 and y^2

2. Simplify the expression.

$$-x + 6x - 8x + 3x$$

Solution:

All of these terms have the same exponent, so we add the coefficients.

$$(-1 + 6 - 8 + 3)x$$

$$0x$$

$$0$$

3. What stays the same when adding or subtracting like terms?

Solution:

The exponent and the base stay the same when adding and subtracting like terms, while the coefficient changes.

4. Simplify the expression.

$$x + 2x^2 - y - 5x^2 + 7y - 4x$$

Solution:

We start by grouping like terms,

$$(x - 4x) + (2x^2 - 5x^2) + (-y + 7y)$$

then we simplify the coefficients.

$$(1 - 4)x + (2 - 5)x^2 + (-1 + 7)y$$

$$-3x - 3x^2 + 6y$$

5. Simplify the expression.

$$\frac{1}{3}x - 5x^2 + \frac{1}{2}x^2 - x - y$$

Solution:

We start by grouping like terms, then we simplify the coefficients.

$$\left(\frac{1}{3}x - x\right) + \left(-5x^2 + \frac{1}{2}x^2\right) - y$$

$$\left(\frac{1}{3} - 1\right)x + \left(-5 + \frac{1}{2}\right)x^2 - y$$

$$-\frac{2}{3}x - \frac{9}{2}x^2 - y$$

6. Simplify the expression.

$$2a^2b - 5ab - 3ab^2 + a^2b + 4ab$$

Solution:

We start by grouping like terms, then we simplify the coefficients.

$$(2a^2b + a^2b) + (-5ab + 4ab) - 3ab^2$$

$$(2 + 1)a^2b + (-5 + 4)ab - 3ab^2$$

$$3a^2b - ab - 3ab^2$$

MULTIPLYING AND DIVIDING LIKE TERMS

1. Simplify the expression.

$$\frac{3x^2}{x^3}$$

Solution:

Cancel the x^2 in the numerator with the x^3 in the denominator.

$$\frac{3x^2}{x^2(x)}$$

$$\frac{3}{x}$$

2. Simplify the expression.

$$2a^2 \cdot 6b^3 \cdot ab^2$$

Solution:

Using rules of exponents, we can write the product as

$$2a^2 \cdot 6b^3 \cdot ab^2$$

$$12a^2b^3 \cdot ab^2$$

$$12a^{2+1}b^{3+2}$$

$$12a^3b^5$$

3. Simplify the expression.

$$\frac{6x^a}{3x^b}$$

Solution:

Using rules of exponents, we can write the quotient as

$$\frac{6}{3}x^{a-b}$$

$$2x^{a-b}$$

4. Simplify the expression.

$$3x^a \cdot 5x^b$$

Solution:

Using rules of exponents, we can write the product as

$$3 \cdot 5x^{a+b}$$

$$15x^{a+b}$$

5. Simplify the expression.

$$\frac{5y^2 \cdot 4x^3 \cdot 2xy}{x^2y}$$

Solution:

Using rules of exponents, we can write the product in the numerator as

$$\frac{5y^2 \cdot 4x^3 \cdot 2xy}{x^2y}$$

$$\frac{20x^3y^2 \cdot 2xy}{x^2y}$$

$$\frac{40x^{3+1}y^{2+1}}{x^2y}$$

$$\frac{40x^4y^3}{x^2y}$$

Using rules of exponents, we can write the quotient as

$$40x^{4-2}y^{3-1}$$

$$40x^2y^2$$

6. Simplify the expression.

$$\frac{2y^2 \cdot 3x^3y \cdot x^2y^2}{x^4y^2}$$

Solution:

Using rules of exponents, we can write the product in the numerator as

$$\frac{2y^2 \cdot 3x^3y \cdot x^2y^2}{x^4y^2}$$

$$\frac{6x^3y^3 \cdot x^2y^2}{x^4y^2}$$

$$\frac{6x^5y^5}{x^4y^2}$$

Using rules of exponents, we can write the quotient as

$$6x^{5-4}y^{5-2}$$

$$6xy^3$$

DISTRIBUTIVE PROPERTY

1. Use the Distributive Property to simplify the expression.

$$5(x-2)+\frac{1}{2}(6-2x)$$

Solution:

Distribute the coefficients in front of the parentheses across the terms inside the parentheses.

$$5(x)-5(2)+\frac{1}{2}(6)-\frac{1}{2}(2x)$$

$$5x-10+3-x$$

$$4x-7$$

2. Use the Distributive Property to expand the expression.

$$-\frac{2}{5}(10-5x)$$

Solution:

Distribute the coefficient in front of the parentheses across the terms inside the parentheses.

$$-\frac{2}{5}(10)+\frac{2}{5}(5x)$$

$$-4+2x$$

■ 3. Give an example that demonstrates the Distributive Property with subtraction.

Solution:

There are many correct answers. For example, the following all work:

$$2(x-1)=2x-2$$

$$-\frac{1}{3}(9-2x)=-3+\frac{2}{3}x$$

However, this example does not work:

$$2(3-2x)=6-2x$$

The Distributive Property states that we have to multiply the coefficient outside of the parentheses by each term inside the parentheses.

■ 4. Which three main operations are used in the Distributive Property?

Solution:

Multiplication, addition, and subtraction.

5. Use the Distributive Property to simplify the expression.

$$2(5-3x)-2(x-4)$$

Solution:

Distribute the coefficients in front of the parentheses across the terms inside the parentheses.

$$2(5)-2(3x)-2(x)-2(-4)$$

$$10-6x-2x+8$$

$$18-8x$$

6. What value would make the following equation true?

$$2(x+3)=??+6$$

Solution:

If we expand the left side, we get

$$2(x)+2(3)=??+6$$

$$2x+6=??+6$$

We can see that the missing value has to be $2x$.

DISTRIBUTIVE PROPERTY WITH FRACTIONS

1. Use the Distributive Property to expand the expression.

$$-\frac{x^2z}{y^3}\left(\frac{y^2}{2}-\frac{xz^3}{z^2}\right)$$

Solution:

Distribute the coefficient fraction in front of the parentheses across the fractions inside the parentheses.

$$-\frac{x^2z}{y^3}\left(\frac{y^2}{2}\right)-\frac{x^2z}{y^3}\left(-\frac{xz^3}{z^2}\right)$$

$$-\frac{(x^2z)(y^2)}{(y^3)(2)}+\frac{(x^2z)(xz^3)}{(y^3)(z^2)}$$

$$-\frac{x^2y^2z}{2y^3}+\frac{x^3z^4}{y^3z^2}$$

Cancel common factors within each fraction.

$$-\frac{x^2z}{2y}+\frac{x^3z^2}{y^3}$$

2. Fill in the blanks.

"When we're distributing fractions, we multiply the numerator of the coefficient by the ___________ of the terms inside the parentheses, and we multiply the denominator of the coefficient by the ___________ of the terms inside the parentheses."

Solution:

numerators, denominators

3. Use the Distributive Property to expand the expression.

$$\frac{2}{3}\left(\frac{x}{2}-6\right)$$

Solution:

Distribute the coefficient fraction in front of the parentheses across the terms inside the parentheses.

$$\frac{2}{3}\left(\frac{x}{2}\right)-\frac{2}{3}(6)$$

$$\frac{2x}{6}-\frac{12}{3}$$

Cancel common factors from each fraction.

$$\frac{x}{3} - 4$$

4. Explain why the two sides of the equation aren't equal to one another.

$$\frac{3}{2}\left(\frac{x}{5} - \frac{y}{2}\right) \neq \frac{3x}{10} - \frac{y}{2}$$

Solution:

The coefficient fraction was only distributed to the first fraction inside the parentheses, not to both, as it should have been. We should have seen

$$\frac{3}{2}\left(\frac{x}{5}\right) - \frac{3}{2}\left(\frac{y}{2}\right) = \frac{3x}{10} - \frac{3y}{4}$$

$$\frac{3x}{10} - \frac{3y}{4} \neq \frac{3x}{10} - \frac{y}{2}$$

5. What missing value would make the equation true?

$$\frac{2ab}{c^2}\left(\frac{3ac}{b} + a^2c^2\right) = \frac{6a^2}{c} + ??$$

Solution:

Simplify the left side by distributing the $2ab/c^2$ across the terms inside the parentheses.

$$\frac{2ab}{c^2}\left(\frac{3ac}{b}\right)+\frac{2ab}{c^2}(a^2c^2)=\frac{6a^2}{c}+??$$

$$\frac{(2ab)(3ac)}{(c^2)(b)}+\frac{(2ab)(a^2c^2)}{c^2}=\frac{6a^2}{c}+??$$

$$\frac{6a^2bc}{bc^2}+\frac{2a^3bc^2}{c^2}=\frac{6a^2}{c}+??$$

Simplify within each fraction by dividing like terms.

$$\frac{6a^2}{c}+\frac{2a^3b}{1}=\frac{6a^2}{c}+??$$

$$\frac{6a^2}{c}+2a^3b=\frac{6a^2}{c}+??$$

Now that we have matching $6a^2/c$ terms on each side, we can see that the missing term is $2a^3b$.

6. Use the Distributive Property to show that the equation is true.

$$\frac{x^2}{3z}\left(\frac{2x}{z}+y^2\right)=\frac{2x^3}{3z^2}+\frac{x^2y^2}{3z}$$

Solution:

Simplify the left side by distributing the $x^2/3z$ across the terms inside the parentheses.

$$\frac{x^2}{3z}\left(\frac{2x}{z}+y^2\right)=\frac{x^2}{3z}\left(\frac{2x}{z}\right)+\frac{x^2}{3z}(y^2)$$

$$\frac{x^2}{3z}\left(\frac{2x}{z}+y^2\right)=\frac{(x^2)(2x)}{(3z)(z)}+\frac{(x^2)(y^2)}{(3z)(1)}$$

$$\frac{x^2}{3z}\left(\frac{2x}{z}+y^2\right)=\frac{2x^3}{3z^2}+\frac{x^2y^2}{3z}$$

This was the original equation we were asked to prove, and we've shown that the left and right sides are equivalent.

$$\frac{2x^3}{3z^2}+\frac{x^2y^2}{3z}=\frac{2x^3}{3z^2}+\frac{x^2y^2}{3z}$$

PEMDAS AND ORDER OF OPERATIONS

1. Simplify the expression.

$$\sqrt{2(5-3)} - |3[6-7]|$$

Solution:

Simplify the innermost parentheses first.

$$\sqrt{2(2)} - |3[-1]|$$

$$\sqrt{4} - |-3|$$

$$\sqrt{4} - 3$$

Apply the root (which is like an exponent).

$$2 - 3$$

$$-1$$

2. Using PEMDAS, evaluate each expression separately to show that they are not equal.

$$4 \times (3-1) - (4 \div 2 + 2)$$

$$(4 \times 3 - 1) - 4 \div (2 + 2)$$

Solution:

The first expression simplifies as

$$4 \times (3 - 1) - (4 \div 2 + 2)$$

$$4 \times 2 - (2 + 2)$$

$$4 \times 2 - 4$$

$$8 - 4$$

$$4$$

and the second expression simplifies as

$$(4 \times 3 - 1) - 4 \div (2 + 2)$$

$$(12 - 1) - 4 \div 4$$

$$11 - 4 \div 4$$

$$11 - 1$$

$$10$$

■ 3. Use order of operations to simplify the expression.

$$(10 - [(-1)^2 + 1 - 6 \div 6])^{1/2} + 4 \div 2$$

Solution:

Start by simplifying the innermost parentheses.

$$(10 - [(-1)^2 + 1 - 6 \div 6])^{1/2} + 4 \div 2$$

$$(10 - [1 + 1 - 6 \div 6])^{1/2} + 4 \div 2$$

$$(10 - [1 + 1 - 1])^{1/2} + 4 \div 2$$

$$(10 - 1)^{1/2} + 4 \div 2$$

$$9^{1/2} + 4 \div 2$$

Apply the exponent.

$$3 + 4 \div 2$$

Perform multiplication and division from left to right, then addition and subtraction from left to right.

$$3 + 2$$

$$5$$

4. Use order of operations to simplify the expression.

$$3 - [(-2)^2 x + (3 - 7)]$$

Solution:

Start by simplifying the innermost parentheses.

$$3-[(-2)^2x+(-4)]$$

$$3-[(-2)^2x-4]$$

Apply the exponent.

$$3-[4x-4]$$

Distribute the -1 across the brackets, then perform addition and subtraction from left to right on like terms.

$$3-4x+4$$

$$7-4x$$

5. Using order of operations, explain why $9+6\div 3\neq 5$.

Solution:

Order of operations tells us that we have to perform division before addition, so the expression would simplify as

$$9+6\div 3$$

$$9+2$$

$$11$$

6. Use order of operations to simplify the expression.

$$\frac{-2+3-10\cdot 2\cdot[(5-4)+2]}{2}$$

Solution:

Start by simplifying the innermost parentheses.

$$\frac{-2+3-10\cdot 2\cdot[(5-4)+2]}{2}$$

$$\frac{-2+3-10\cdot 2\cdot[1+2]}{2}$$

$$\frac{-2+3-10\cdot 2\cdot 3}{2}$$

There are no exponents, so perform multiplication and division from left to right within the numerator.

$$\frac{-2+3-20\cdot 3}{2}$$

$$\frac{-2+3-60}{2}$$

Perform addition and subtraction from left to right within the numerator.

$$\frac{1-60}{2}$$

$$\frac{-59}{2}$$

$$-\frac{59}{2}$$

W W W . K R I S T A K I N G M A T H . C O M