Unit 10

Numerical and Algebraic Expressions

Lesson 1

Numerical Expressions

CCSS: 6.EE.A.1

UNIT 10: ESSENTIAL QUESTIONS

01. What are the differences between numerical and algebraic expressions?

02. How is the concept of a variable applicable to real world scenarios?

LEARNING OBJECTIVES

✓ **Define and write numerical expressions.**

✓ **Evaluate numerical expressions.**

Solve each of the problems below:

1) 24
  $+\ 35$

2)   107
    $-\ \ 45$

3) 9
$\times\ 5$

4) $110 \div 10 =$

ANSWERS

Solve each of the problems below:

1) $\begin{array}{r} 24 \\ + 35 \\ \hline 59 \end{array}$

2) $\begin{array}{r} 107 \\ - 45 \\ \hline 62 \end{array}$

3) $\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$

4) $110 \div 10 = 11$

Key Words for Operations

Keywords Used In

Adding ➕
- All together
- Add
- Altogether
- Total
- Total
- Sum
- Plus
- Combined
- How many in all
- How much
- In all
- And
- Increase
- Both
- Join
- Increase
- More

Subtracting ➖
- Left
- Minus
- Remain
- Take away
- Subtract
- Reduce
- Change
- Lost
- Less (than)
- Fewer (than)
- Take away
- Subtract
- Remain
- Difference
- How many are left
- Reduce

Multiplying ✖
- Times
- Factor of
- Every
- More
- Multiplied by
- Increased by
- Of
- Product
- Twice
- Triple
- Quadrouple
- Each
- Area
- In all
- Multiple
- All together
-

Dividing ➗
- As much
- Share equally
- Separated
- Quotient of
- Ratio of
- Parts
- Per
- Parts
- Percents
- Half
- Thirds
- Fourths
- Goes into
- Each group has
- Equal sharing
- Put into
- Each

Order of Operations: PEMDAS

P- Parentheses

Always solve what is inside the parentheses first, no matter where they are in the equation/expression

E- Exponents

Always solve the numbers that have exponents next, no matter where they are in the equation/expression

M- Multiply
D- Divide

Multiply and Divide integers as they appear from left to right through the equation/expression.

A- Add
S-Subtract

Add and Subtract integers as they appear from left to right through the equation/expression.

I Do: Numerical Expressions

Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.
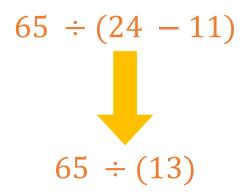
I Do: Numerical Expressions

Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.

$$65 \div (24 - 11)$$

Let's go ahead and translate this to the mathematical symbols.

I Do: Numerical Expressions

Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.

$$65 \div (24 - 11)$$

$$65 \div (13)$$
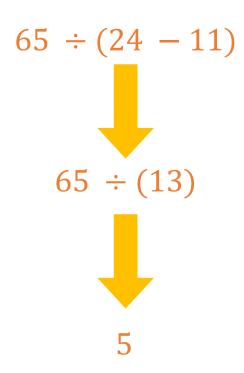
Now let's refer to our PEMDAS handout.

According to PEMDAS, we first solve what is inside the parenthesis.

I Do: Numerical Expressions

Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.

$$65 \div (24 - 11)$$

$$65 \div (13)$$

$$5$$
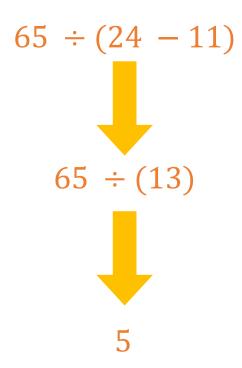
Now let's refer back to our PEMDAS handout.

Next, let's go ahead and divide 65 by 13.

I Do: Numerical Expressions

Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.
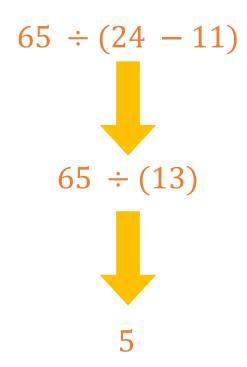
$$65 \div (24 - 11)$$

⬇

$$65 \div (13)$$

⬇

$$5$$

Now we have solved this numerical expression! Woohoo!

Now let's all practice this together.

ANSWERS

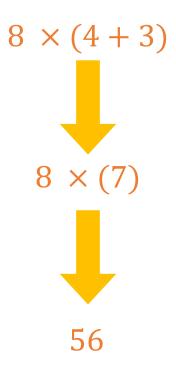Let's solve the following numerical expression: 65 *divided by the difference between* 24 *and* 11.

$$65 \div (24 - 11)$$

$$65 \div (13)$$

$$5$$

We Do: Numerical Expressions

Let's solve the following numerical expression: 8 *mutiplied by the sum of* 4 *and* 3.

ANSWERS

Let's solve the following numerical expression: 8 *mutiplied by the sum of* 4 *and* 3.

$$8 \times (4 + 3)$$
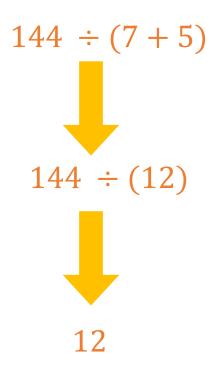
$$8 \times (7)$$

$$56$$

You Do: Numerical Expressions

Let's solve the following numerical expression: 144 *divided by the sum of* 7 *and* 5.

ANSWERS

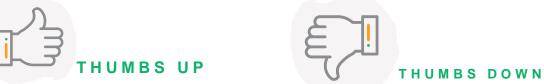Let's solve the following numerical expression: 144 *divided by the sum of* 7 *and* $5.$

$$144 \div (7 + 5)$$

$$144 \div (12)$$

$$12$$

Mid-Lesson Check In

Answer the following questions using the emoji's below:

How are you feeling about the pace of today's lesson?

HAPPY NERVOUS SURPRISED FRUSTRATED SAD

Does today's lesson feel intense?

THUMBS UP THUMBS DOWN

How would you rate your confidence with multiplying fractions by fractions so far?

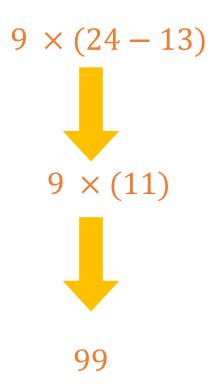HAPPY NERVOUS SURPRISED FRUSTRATED SAD

You Do: Numerical Expressions

Let's solve the following numerical expression: 9 *multiplied by the difference between* 24 *and* 13.

ANSWERS

Let's solve the following numerical expression: 9 *multiplied by the difference between* 24 *and* $13.$

$$9 \times (24 - 13)$$

$$9 \times (11)$$

$$99$$

Keywords Used In

Adding ➕
- All together
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- Altogether
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- Total
- Sum
- Plus
- Combined
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- How much
- In all
- And
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- Both
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- All together
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P- Parentheses

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QZ

It's time for a QZ! Take your time and do your best!

We Do: Numerical Expressions

Which of the answer choices below is the numerical expression of the following statement: 12 *multiplied by the difference between* 36 *and* 24.

$A.\ 12 \times 36 - 24$

$B.\ 12 \times 24 - 36$

$C.\ 24 \times (24 - 36)$

$D.\ 24 \times (36 - 24)$

ANSWERS

Which of the answer choices below is the numerical expression of the following statement: 12 *multiplied by the difference between* 36 *and* 24.

$A.\ 12 \times 36 - 24$

$B.\ 12 \times 24 - 36$

$C.\ 24 \times (24 - 36)$

$D.\ 24 \times (36 - 24)$

We Do: Numerical Expressions

Which of the answer choices below is the numerical expression of the following statement: 45 *divided by the difference between* 28 *and* 19.

A. $45 \div 28 - 19$

B. $45 \div 19 - 28$

C. $45 \div (28 - 19)$

D. $45 \div (19 - 28)$

ANSWERS

Which of the answer choices below is the numerical expression of the following statement: 45 *divided by the difference between* 28 *and* $19.$

$A.\ 45 \div 28 - 19$

$B.\ 45 \div 19 - 28$

$C.\ 45 \div (28 - 19)$

$D.\ 45 \div (19 - 28)$

We Do: Numerical Expressions

Which of the answer choices below is the numerical expression of the following statement: 5 *added to the product of* 7 *and* 9.

A. $5 \times 7 \times 9$

B. $5 + (7 \times 9)$

C. $5 + 7 \times 9$

D. $5 \times (7 - 9)$

ANSWERS

Which of the answer choices below is the numerical expression of the following statement: 5 *added to the product of* 7 *and* 9.

$A.\ 5 \times 7 \times 9$

$B.\ 5 + (7 \times 9)$

$C.\ 5 + 7 \times 9$

$D.\ 5 \times (7 - 9)$