

Quiz over: Number System, Translating words/ algebra, simplifying expressions and fractions, Polynomial parts

Fractions

Can only + or - things with same name

get common denominator

$$\frac{3}{4} + \frac{5}{4} = \frac{3+5}{4} = \frac{8}{4} = 2$$

$$\frac{3}{4} - \frac{5}{8} = \frac{6}{8} - \frac{5}{8} = \frac{1}{8}$$

$$\frac{1}{4} + \frac{2}{6} = \frac{3}{12} + \frac{4}{12} = \frac{7}{12}$$

Multiplication

multiply straight across

multiply tops w/ tops, bottoms w/ bottoms

$$\frac{3}{4} \cdot \frac{5}{8} = \frac{3 \cdot 5}{4 \cdot 8} = \frac{15}{32}$$

$$\frac{1}{4} \cdot \frac{2}{6} = \frac{1 \cdot 2}{4 \cdot 6} = \frac{2}{24} = \frac{1}{12}$$

Skip flip multiply

$$\frac{3}{4} \cdot \frac{8}{5} = \frac{3 \cdot 8}{4 \cdot 5} = \frac{24}{20} = \frac{6}{5}$$

Equation Proportion

Multiply diagonals

$$\frac{3}{4} = \frac{x}{8} \Rightarrow 3 \cdot 8 = 4 \cdot x \Rightarrow 24 = 4x \Rightarrow 6 = x$$

$$\frac{3x-2}{4} = \frac{5x}{8} \Rightarrow 8(3x-2) = 4(5x) \Rightarrow 24x - 16 = 20x \Rightarrow -24x - 16 = -24x \Rightarrow -16 = -4x \Rightarrow 4 = x$$

Simplify Expressions

P
E
M
D
A
S

Simplify the following expressions.

5.) $17 - 4 + 3^2$

PEAS

$$17 - 4 + 9 = 13 + 9 = 22$$

6.) $2\sqrt{10^2 - 8^2}$

PEAS

$$2\sqrt{100 - 64} = 2\sqrt{36} = 2 \cdot 6 = 12$$

7.) $\frac{4 - 5 \cdot 4}{-2^2}$

PMAS

$$\frac{4 - 20}{-4} = \frac{-16}{-4} = 4$$

8.) $7 - 2(4^2 \div 8 \cdot 2)$

PDAS

$$7 - 2(16 \div 8 \cdot 2) = 7 - 2(2 \cdot 2) = 7 - 2(4) = 7 - 8 = -1$$

$(-2)^2 = -2 \cdot -2 = 4$
 $-2^2 = -1 \cdot 2 \cdot 2 = -4$

$(-2)^2 = 4$
 $-2^2 = -4$

Square root
 $\sqrt{\quad} = \sqrt{\quad}$

Bored of Review?...let's do Board Work!

1. $\frac{5}{17} + \frac{8}{17}$ 2. $\frac{4}{21} - \frac{20}{21}$ 3. $\frac{7}{5} + \frac{9}{10}$

4. $\frac{-3}{7} + \frac{15}{7}$ 5. $\frac{-5}{5} \cdot \frac{10}{6}$ 6. $\frac{2}{3} \div \frac{-7}{12}$

7. $8 \div 2(9-3)^2$ 8. $8 - 2(9+3)^2$ 9. $5 - 10 + 20$

10. $\frac{4 + \sqrt{6^2 - 4(7) + 8}}{5}$ 11. $\frac{-2 - \sqrt{(-3)^2 + 4(-5)}}{10}$

(Handwritten work for 10 and 11 shows simplification steps, including $4 + \sqrt{36 - 28 + 8}$ and $4 + \sqrt{16}$ for problem 10, and $-2 - \sqrt{9 + 20}$ for problem 11.)

Name _____ Algebra 2 Prep/Review Portfolio Work _____ Hour _____

Assigned Date _____ Due Date _____

Self-Assessment:	Cannot complete	Attempted	Nearly There	Can explain to others
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Objective: **Simplifying Expressions**

- Know the difference between an expression and an equation
- Use the Order of Operations to simplify expression

Links: Order of Operations	CCSS Math: 6.EE.A.2, 6.EE.A.2c
Substituting and Evaluating Expressions	https://bit.ly/3eExUW9 https://bit.ly/3871Lny

1. What is the difference between an expression and an equation?
2. What does each letter in PEMDAS stand for?
3. Why is PEMDAS called The Order of Operations?

For Numbers 4-6, Simplify each expression.

4. $3 \cdot (2 \cdot 4^3) \div 4$ 5. $\frac{13 - (2 + 3 - 7)^2}{15} + 5$ 6. $9(2^3 \div 4 \cdot 5) - 10 \cdot 4$

7. Identify the following from this expression $\frac{1}{3}x^2 + 7 - (8y - 20x)$

Terms	Coefficients	Variables	Constants	Factor Pairs

8. Simplify the expression showing Work: $\frac{1}{3}x^2 + 7 - (8y - 20x)$, if $x = 4$ and $y = 5$.

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Objective: **Simplifying Expressions**

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CCSS Math:	6.EE.A.2, 6.EE.A.2c
Links: Order of Operations	https://bit.ly/3eKJW9
Substituting and Evaluating Expressions	https://bit.ly/3871Lny

1. What is the difference between an expression and an equation?

an equation has an equal sign
an expression does not

2. What does each letter in PEMDAS stand for?

P: Parentheses E: Exponents M: Multiply D: Divide
A: Addition S: subtracting

3. Why is PEMDAS called The Order of Operations?

PEMDAS has the order in which we perform math operations on expressions

★ change to 4. For Numbers 4-6, Simplify each expression.

4. $3 \cdot (2 \cdot 4^3) \div 4$
 $3 \cdot (2 \cdot 64) \div 4$
 $3 \cdot (128) \div 4$
 $384 \div 4$
 96

5. $\frac{13 - (2 + 3 - 7)^2}{15} + 5$
 $\frac{13 - (-5 - 7)^2}{15} + 5$
 $\frac{13 - (-2)^2}{15} + 5$
 $\frac{13 - 4}{15} + 5$

6. $9(2^3 \div 4 \cdot 5) - 10 \cdot 4$
 $9(8 \div 4 \cdot 5) - 10 \cdot 4$
 $9(2 \cdot 5) - 40$
 $9(10) - 40$
 $90 - 40$
 50

7. Identify the following from this expression $\frac{1}{3}x^2 + 7 - (8y - 20x)$

Terms	Coefficients	Variables	Constants	Factor Pairs
$\frac{1}{3}x^2, 7, -8y$ and $20x$?, 20	x and y	7	1, 7 1, 2, 4, 8 1, 2, 4, 5, 10, 20

8. Simplify the expression showing Work: $\frac{1}{3}x^2 + 7 - (8y - 20x)$, if $x = 4$ and $y = 5$.

$$\frac{1}{3}(4)^2 + 7 - (8(5) - 20(4))$$

$$\frac{1}{3}(16) + 7 - (40 - 80)$$

$$\frac{16}{3} + 7 - (-40)$$

$$5\frac{1}{3} + 47$$

$52\frac{1}{3}$ or $52.\bar{3}$