

Warm-up

1)

Which set of numbers does not contain 70?

- A. integers
- B. whole numbers
- C. natural numbers
- D. irrational numbers

2)

Which expression is equivalent to $13x - 2(3x + 6)$?

- A. $-5x$
- B. $7x - 12$
- C. $7x + 12$
- D. $19x + 12$

3) Between which two integers does $\sqrt{115}$ lie?

4)

How many solutions does the equation $5(x - 2) = 8 + 5x$ have?

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- A. integers ✓
- B. whole numbers ✓
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- D. irrational numbers

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- A. $-5x$
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$$13x - 6x - 12$$
$$7x - 12$$

3) Between which two integers does $\sqrt{115}$ lie?

$$100 < 115 < 121$$
$$\sqrt{100} < \sqrt{115} < \sqrt{121}$$

$$10 < \sqrt{115} < 11$$

between 10 and 11

4)

How many solutions does the equation $5(x - 2) = 8 + 5x$ have?

$$4) 5(x-2) = 8 + 5x$$

$$5x - 10 = 8 + 5x \text{ (dist. prop.)}$$

$$5x - 5x - 10 = 8 + 5x - 5x \text{ (subt. prop. =)}$$

$$-10 \neq 8$$

no solution

Daily HW Check:

NS and Equation Review: 5

NS and Equation Review: 12

Go to my weebly to check your answers.

Exponential Form, Simplifying Powers, and Evaluating Expressions Foldable

Mrs. Ballard

Exponents

- 1) $100(10)(10) = 10^3$
- 2) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
- 3) $(-4)(-4)(-4)$
- 4) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

Examples:

Exercises:

1. 2^3

2. 3^4

Expanded Form and Exponential Form

Simplifying Powers

Evaluating Expressions

$12x^4 \rightarrow$ exponent/power
 $\downarrow \quad \rightarrow$ base
 coefficient

Examples:

Expanded Form	Exponential Form
1) $5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$	5^5
2) $(-4)(-4)(-4)$	$(-4)^3$
3) $8 \cdot 8 \cdot 8 \cdot p \cdot p \cdot p \cdot p$	$8^3 p^4$
4) $(\frac{1}{2})(\frac{1}{2})(\frac{1}{2}) z \cdot z \cdot z \cdot z$	$(\frac{1}{2})^3 z^4$

...

$$\text{Ex 1) } 3^4 = 3 \cdot 3 \cdot 3 \cdot 3 = \underline{81}$$

$$\text{Ex 2) } \left(\frac{1}{4}\right)^2 = \frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16}$$

$$\text{Ex 3) } (-8)^2 = -8 \cdot -8 = 64$$

$$\text{Ex 4) } -2^3 = -2 \cdot 2 \cdot 2 = -8$$

$$\text{Ex 5) } 3^2 u^6 = 3 \cdot 3 \cdot u \cdot u \cdot u \cdot u \cdot u \cdot u = 9u^6$$

$$\text{Ex 6) } (-6)^3 = -6 \cdot -6 \cdot -6 = -216$$

Simplifying Powers

Step 1: Plug in all given numbers into the variables... use parenthesis!

Step 2: Solve using order of operations

Ex 1) b^2 for $b = -7$
 $(-7)^2 = -7 \cdot -7 = 49$

Ex 2) $x \div y^z$ for $x = 9$, $y = 3$
and $z = 2$
 $9 \div 3^2$
 $9 \div 9$
 1

Ex 3) $x - y(z \cdot y^z)$ for $x = 20$,
 $y = 4$,
and $z = 2$
 $20 - 4(2 \cdot 4^2)$
 $20 - 4(2 \cdot 16)$
 $20 - 4(32)$
 $20 - 128$
 -108

Evaluating Expressions