Warm UP (8min)

1. Fourteen more than a number, is multiplied by five.
2. One half, of the difference of seven and a number.
3. Four more than a number, divided by sixty.
4. The quotient of twenty less than a number, and fifty six.

Translate this to Algebraic Expressions

5. $3(b+2)$
6. $8+3(2t+4)$
7. $8x-(2x-4)-3$

Distribute and combine like terms

8. $\frac{(2*4-3)}{5}-4$
9. $4--3*\frac{(2*11+5)}{9}$

PEMDAS

Review

Fourteen more than a number, is multiplied by five.

$(14+n)5$

One half, of the difference of seven and a number.

$\frac{1}{2}(7-n)$

Four more than a number, divided by sixty.

$\frac{4+n}{60}$

The quotient of twenty less than a number, and fifty six.

$\frac{(n-20)}{56}$

Review

$3(b+2)$

$3(b+2)$

$3b + 3 \cdot 2$

$3b + 6$

$8 + 3(2t+4)$

$8 + 3(2t+4)$

$8 + 3 \cdot 2t + 3 \cdot 4$

$8 + 6t + 12$

$8 + 12 + 6t$

$20 + 6t$

Review

$8x - (2x - 4) - 3$

$8x - 1(2x - 4) - 3$

$8x - 2x + 4 - 3$

$6x + 1$

$6x + 1$

notice the negative sign in front of the paranthases changes the signs inside.

Review

$$\frac{(2*4-3)}{5} - 4 = \frac{(2\cdot 4-3)}{5} - 4$$

$$\frac{(8-3)}{5} - 4$$

$$\frac{5}{5} - 4$$

$$1 - 4 = -3$$

Review

$$4 - - -3 * \frac{(2*11+5)}{9} = 4 - - - 3 \cdot \frac{(2\cdot 11+5)}{9}$$

$$4 - - - 3 \cdot \frac{(22+5)}{9}$$

$$4 - - - 3 \cdot \frac{27}{9}$$

$$4 - - - 3 \cdot 3$$

$$4 - - - 9$$

$$4 + - 9$$

$$4 - 9 = -5$$

CITY YEAR

Ms. Ross

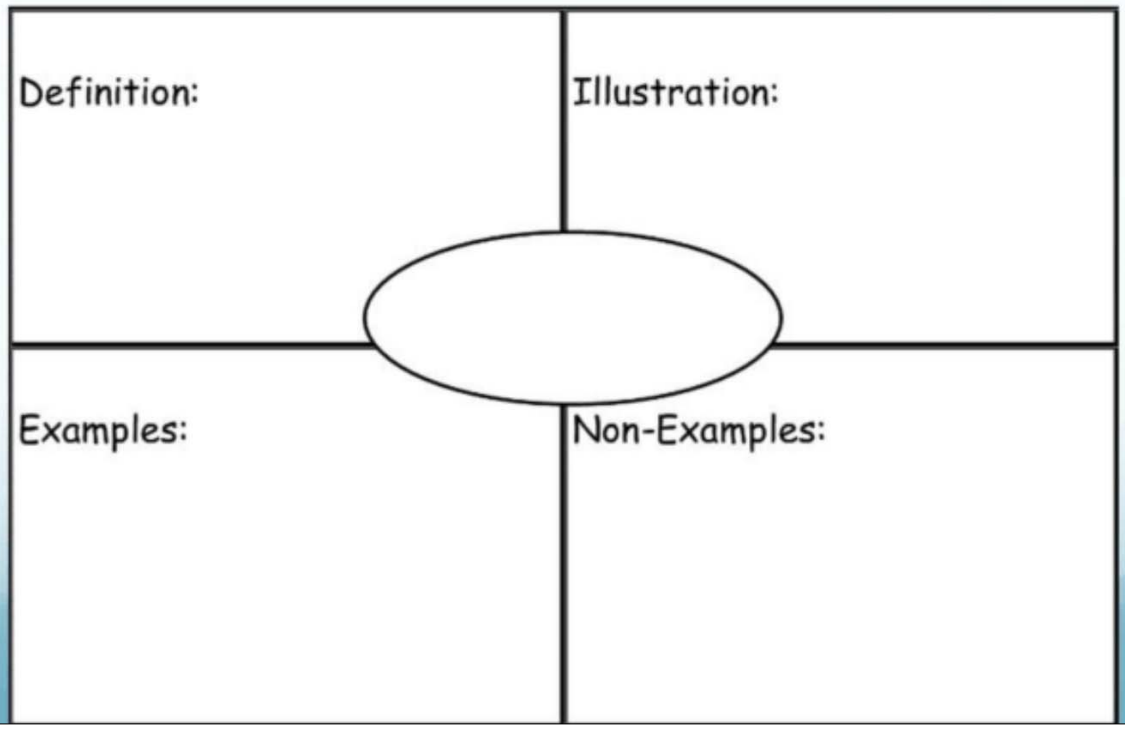
Room 147

after School

tutoring

Vocab Catchup

Nothing New



Unit 1: Numbers and Expressions

Day 6/9: Review and Exponents

u1d6 NOTES

MUST BE ORGANIZED FOR THE TEST

Index:

UNIT 1

Number Types

- All Numbers
  - Imaginary $\sqrt{-1}$ i
  - Real
    - Irrational $\sqrt{3}$ π
    - Rational $\frac{1}{4}$ .423
      - Integers -5, -2, -1
        - whole 0
          - Natural 1, 2, 3...

Number Types

Order the numbers from least to greatest

$-3, \quad 1, \quad \frac{7}{6}$

-3

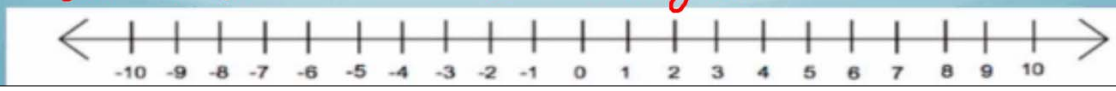
Smallest because its Zero

$\frac{7}{6} = \frac{6}{6} + \frac{1}{6} = 1\frac{1}{6}$

larger than one

$-3, 1, \frac{7}{6}$

smallest ⟶ largest



Number Types

Order the numbers from least to greatest

$\sqrt{3}, \quad -0.8, \quad \frac{7}{9}$

Smallest because its negative.

less then one

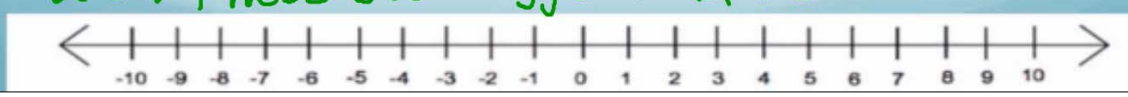
Smallest ⟶ largest

$-.8, \frac{7}{9}, \sqrt{3}$

$\sqrt{3}$ is larger than one.

$1 \cdot 1 = 1 \quad 1.5 \cdot 1.5 = 2.25$

look I need even bigger than 1.5



Number Types

Estimate the Square Root to the nearest integer:

$\sqrt{99}$

look for $\sqrt{99} \approx 10$

nearby squares

$9 \cdot 9 = 81$ ← 18 away from 99

$10 \cdot 10 = 100$ ← 1 away from 99

Closest integer

Attempt	Correction

Number Types

Estimate the Square Root to the nearest integer:

$\sqrt{48}$

$7 \cdot 7 = 49$ → one away

$6 \cdot 6 = 36$ → 12 away

$\sqrt{48} \approx 7$

Attempt	Correction

Number Types

Estimate the Square Root to the nearest integer:

$\sqrt{30}$

$5 \cdot 5 = 25$ → 5 away

$6 \cdot 6 = 36$ → 6 away

$\sqrt{30} \approx 5$

Attempt	Correction

Expressions

Five more than a number, is multiplied by six.

$(5+n)6$

$30+6n$

Both ways are fine.

Evaluate Expressions

Attempt	Correction
$3x(2x-7)$ $x=5$	$3x(2x-7)$ $3\cdot\boxed{5}(2\cdot\boxed{5}-7)$ $3\cdot5\cdot(10-7)$ $3\cdot5(3)$ $15\cdot3=45$

Evaluate Expressions

When: $x=4$ $x=-4$ $x=3$

$3x-15$

$3\cdot\boxed{4}-15$
$12-15$
-3

$3\cdot\boxed{-4}-15$
$-12-15$
-27

$3\cdot\boxed{3}-15$
$9-15$
-6

Evaluate Expressions

When: $x = 4$, $x = -4$, $x = 3$

$-(4 - 7x)$

$-(4-7\boxed{4})$

$-(4-28)$

$-(-24)$

24

$-(4-7\boxed{-4})$

$-(4+28)$

$-(32)$

-32

$-(4-7\cdot\boxed{3})$

$-(4-21)$

$-(-17)$

17

Evaluate Expressions

When: $x = 4$ $x = -4$ $x = 3$

$(6x - 2x)x + x$

lets simplify first!

$(4x)x + x = 4x^2 + x$ Now Plug in X!

$4\cdot\boxed{4}^2 + \boxed{4}$

$64 + 4$

68

$4\cdot\boxed{-4}^2 + \boxed{-4}$

$64 - 4$

60

$4\cdot\boxed{3}^2 + \boxed{3}$

$36 + 3$

39

Hint

Like Terms

I like to always write the positive terms first when grouping.

$$4ab - 4rt + 5abrt + 5rt + 8ab - 2ba$$

$$4ab + 8ab - 2ab + 5rt - 4rt + 5abrt$$

$$10ab + 1rt + 5abrt$$

Distribution

Just change the Sign

Attempt	Correction
$2(3y + b) - (b - 6y + 5)$	$2(3y+b)-(b-6y+5)$

$$6y + 2b - b + 6y - 5$$

$$12y + b - 5$$

Hint *

This negative will Simply change the Sign of all the terms in the parantheses.

I can divide out:

2

3

6 → use the biggest

X → and unique ones

Distribution

RUN IT BACKWARDS

$$\frac{36y^2x}{6x} - \frac{6x}{6x} + \frac{12xc}{6x}$$

$$6x(6y^2 - 1 + 2c)$$

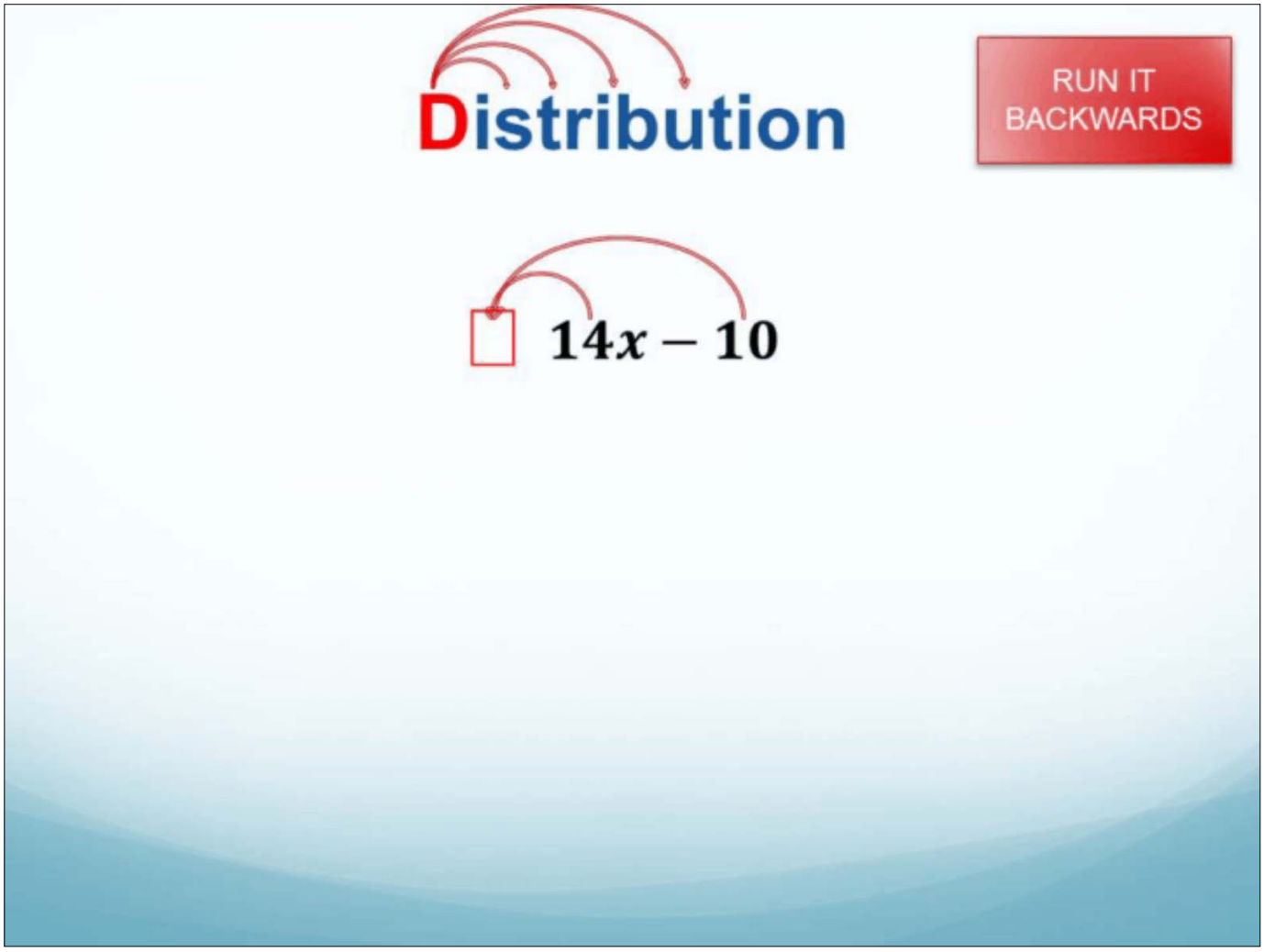
The only number I can divide both terms by is 2

Distribution

RUN IT BACKWARDS

$$\frac{14x}{2} - \frac{10}{2}$$

$$2(7x - 5)$$


Distribution
RUN IT BACKWARDS
$14x - 10$