Pre-Algebra

WELCOME BACK!

To do now:
⇨ Complete Warm Up

Agenda:
⇨ Fractions-Decimals-Percents

Warm Up:
There are 28 days in February. So far, we have had school for 13 days (including today). Write the number of days we have not had school in February as a fraction, percent, and decimal. The percent should be rounded to the nearest tenth of a percent, the decimal to the nearest hundredth.

Homework:
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Warm Up:
There are 28 days in February. So far, we have had school for 13 days (including today). Write the number of days we have not had school in February as a fraction, percent, and decimal. The percent should be rounded to the nearest tenth of a percent, the decimal to the nearest hundredth.

$\frac{15}{28}$ FRACTION

$28\overline{)15.0000} = 0.53571$ → 0.54

0.53571 → 53.571% → 53.6%

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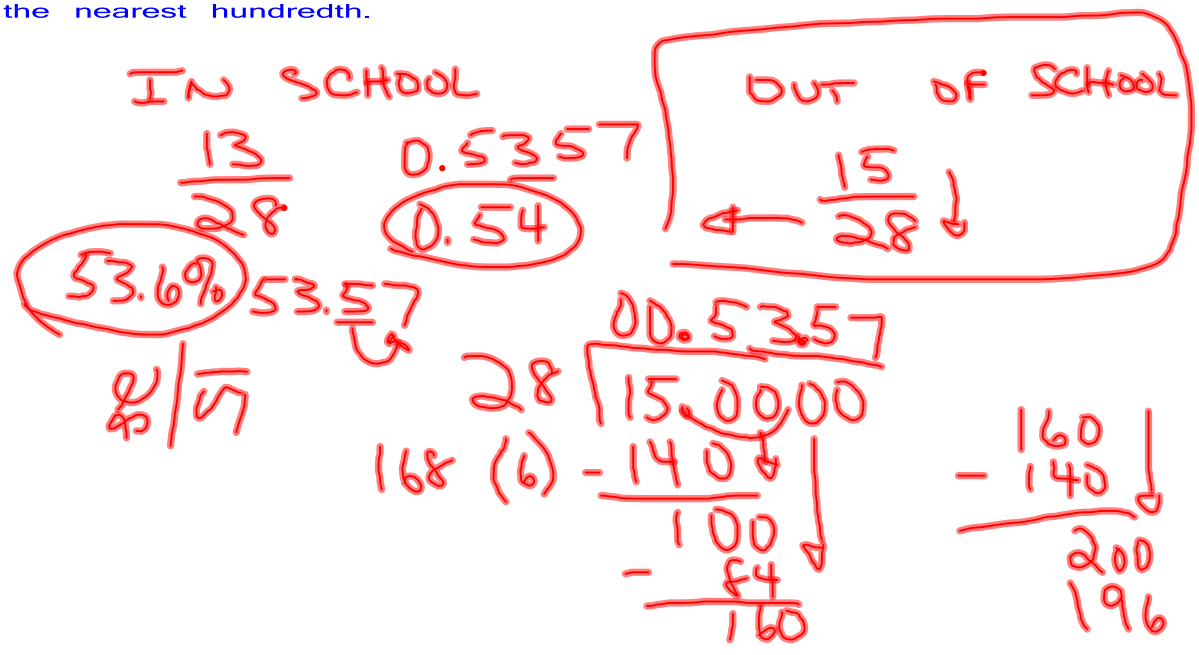

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Fraction to Decimal to Percent

First you take the fraction and divide the numerator by the denominator (which is the bottom into the top). Add a decimal and some zero's to help the division.

To get the decimal to the percent, move the decimal two places to the right.

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FRACTION OF MALE STUDENTS TO FEMALE STUDENTS.

DECIMAL (HUNDREDTH)

PERCENT (TENTH)

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Introduction to Algebra

WELCOME BACK!

To do now:

- Complete Warm Up

Agenda:

- Return tests
- Systems of Linear Equations

Warm Up:

- What is the point of intersection of the equations y = 5 and x = -3 when graphed? When done, find the x and y intercepts for both equations

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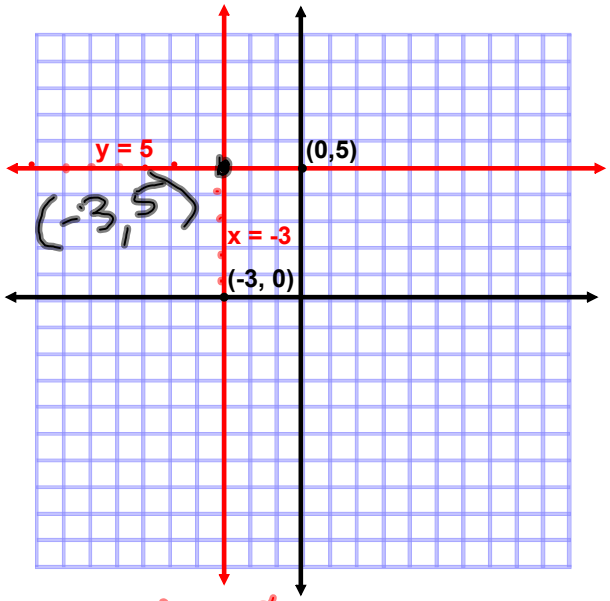
What is the point of intersection of the equations y = 5 and x = -3 when graphed? When done, find the x and y intercepts for both equations and their slopes.

$m = 0$
$x_0 = \emptyset$
$y_0 = 5$



$m = \emptyset$
$x_0 = -3$
$y_0 = \emptyset$

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Systems of Linear Equations

A "system" is a group of equations, in this case linear, that are graphed and analyzed together. It can be more than two equations.

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One of the important parts of a system is the point of intersection of the equations. There are essentially 3 methods we will look at...some more closely than others.

1. Graphic
2. Substitution
3. Linear Combinations

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Graphic Method

The least favorable of all though easiest to do. Relies on the equations being graphed and you "guessing" where the point of intersection is and then checking to see if it works.

Positives: QUICK & EASY

Negatives: NOT ACCURATE, ESPECIALLY IF PT. OF INTERSECTION DOES NOT CONTAIN INTEGER VALUES.

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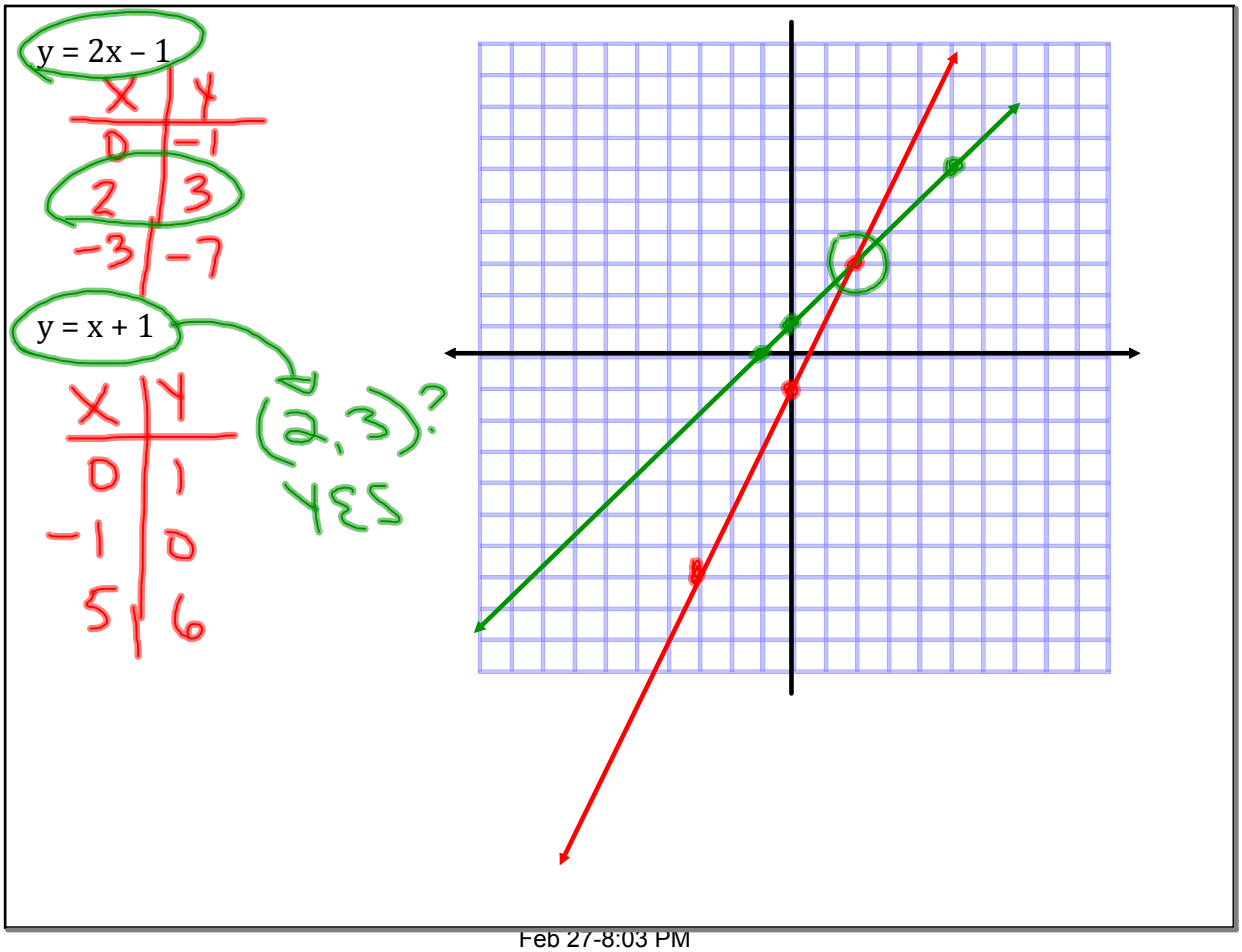

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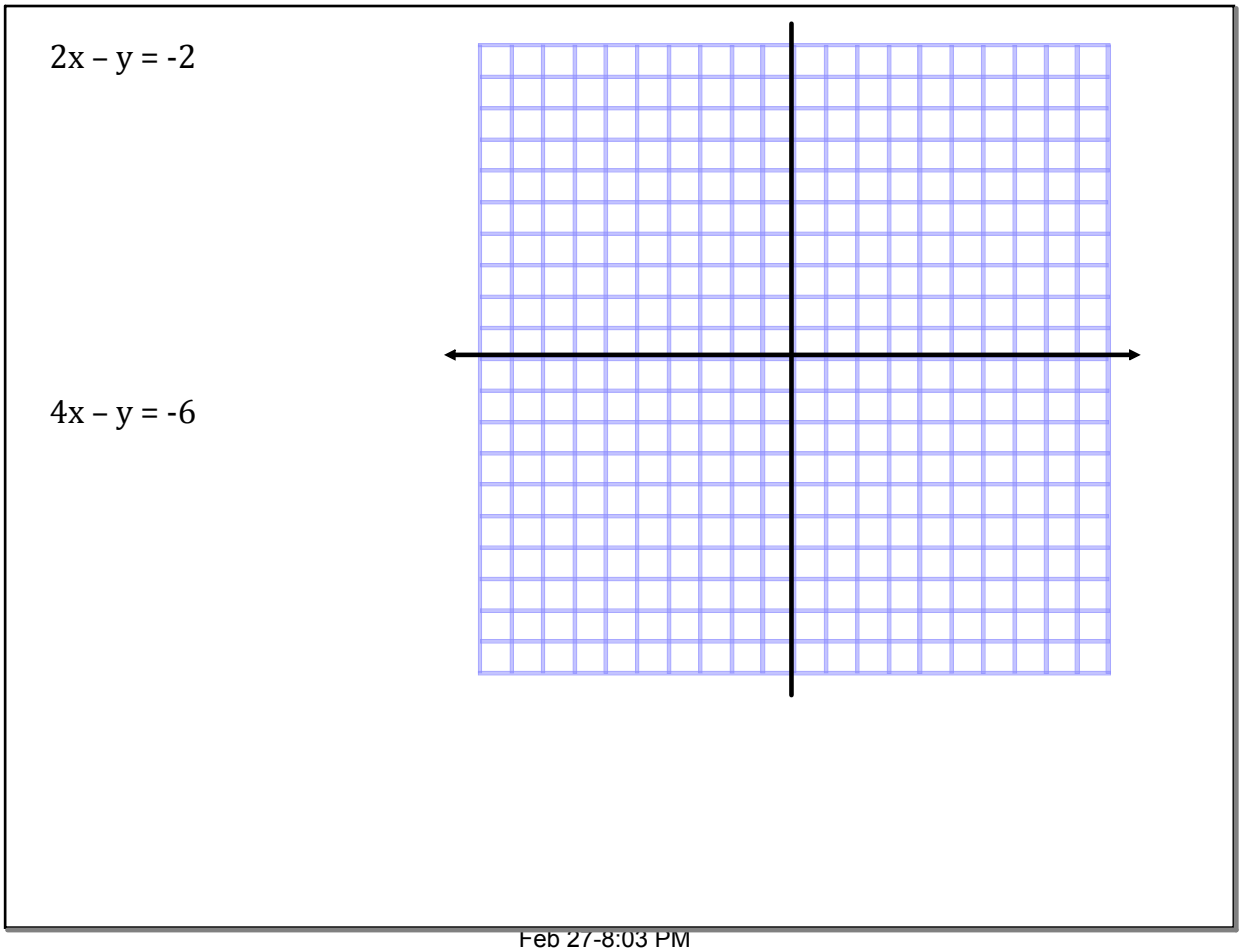

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$x + y = -2$

$2x - 3y = -9$

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$3x + 2y = 4$

$-x + 3y = -5$

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Advanced Algebra

To do now:

- Complete Warm Up

Agenda:

- Radicals

Warm Up:

- Solve for x: $(x + 2)^2 = 16$

Homework:

- know your perfect squares and rules

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$(x+2)^2=16$

$x^2+4x+4=16$

$x^2+4x-12=0$

$(x+6)(x-2)=0$

$x=-6 \quad x=2$

$(x+2)^2=16$

$(x+2)^2-16=0$

$(x+2-4)(x+2+4)=0$

$(x-2)(x+6)=0$

$x=2 \quad x=-6$

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$(x+2)^2 = 16$

$\sqrt{(x+2)^2} = \sqrt{4^2}$

$(x+2) = \pm 4$

$x+2=4$

$x=2$

$\sqrt{16}$

$x^2 = 16$

$x+2=-4$

$x=-6$

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Radicals, Squares, and Square Roots

Objectives: You should be able to:

- Identify the difference between squaring and square rooting a number
- List the perfect squares from 1 - 400
- Identify when there will be one, two, or no solutions
- Identify the difference between simplifying and solving radicals
- Utilize the Rules of Radicals

Vocabulary:

- Radical Sign
- Radicand
- Perfect Square
- Square Root

$\sqrt{}$ $\sqrt[3]{}$ $\sqrt[4]{}$

$25 \rightarrow \sqrt{25}$

$\sqrt{25} = 5$

6^2

$5^2 = 25$

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1	81	289
4	100	324
9	121	361
16	144	400
25	169	
36	196	
49	225	
64	256	

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Simplifying

$\sqrt{36}$

6

$-\sqrt{36}$

-6

Solving

$x^2 = 36$

$\sqrt{x^2} = \pm\sqrt{36}$

$x = \pm 6$

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Rules of Radicals

$\sqrt{AB} = \sqrt{A} \cdot \sqrt{B}$

$\sqrt{100} = \sqrt{25 \cdot 4}$

$= \sqrt{25} \cdot \sqrt{4}$

$= 5 \cdot 2$

$= 10$

$\sqrt{900} = \sqrt{9}\sqrt{100}$

$= 3 \cdot 10$

$= 30$

$\sqrt{256}$

$16 \neq 4 \neq 2$

$\sqrt{16}$

4

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$\sqrt{1600}$ $\sqrt{16}\sqrt{100}$

$4 \cdot 10$

40

$\sqrt{2560000}$ → $\sqrt{256} \cdot \sqrt{100} \cdot \sqrt{100}$

$16 \cdot 10 \cdot 10$

1600

$\sqrt{0.04} = 0.2$

$\sqrt{0.0225}$

0.15

$\sqrt{3600} = 60$

$\sqrt{360} \neq 60$

$\sqrt{360000} = 600$

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$$\sqrt{\frac{A}{B}} = \frac{\sqrt{A}}{\sqrt{B}}$$

$\sqrt{0.04}$

$\sqrt{\frac{4}{100}}$

$\frac{\sqrt{4}}{\sqrt{100}}$

$\frac{2}{10} = 0.2$

$\sqrt{0.0225}$

$\sqrt{\frac{225}{10,000}}$

$\frac{\sqrt{225}}{\sqrt{10000}}$

$\frac{15}{100} = 0.15$

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$\sqrt{0.009}$ → IRRATIONAL

$\sqrt{5}$ → IRRATIONAL

$$\frac{\sqrt{5}}{\sqrt{2} \cdot \sqrt{3}}$$

$\sqrt{2 \cdot 3}$

$\sqrt{6}$

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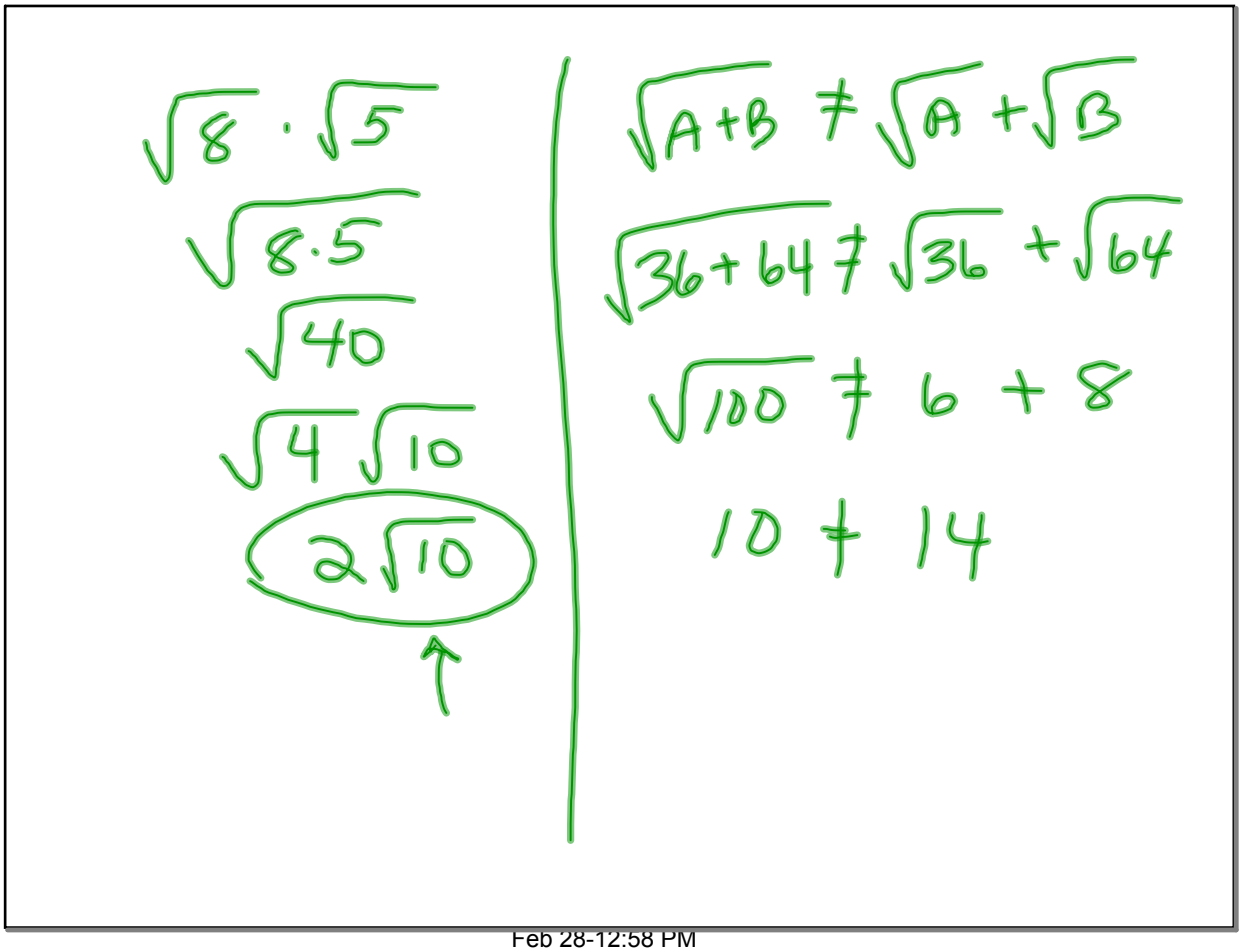

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