Today's Plan:

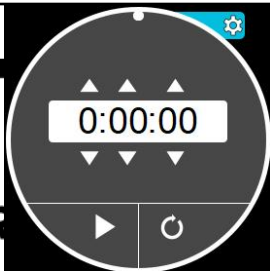*Learning Target (standard)*: I will use prime factorization trees to simplify radicals.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____

0:00:00   #152

BELL RINGER

1.) Graph $y = 2x - 3$
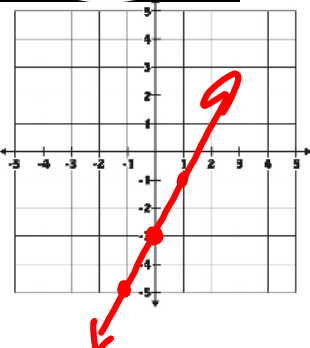
$m = 2$
$I_y: (0, -3)$

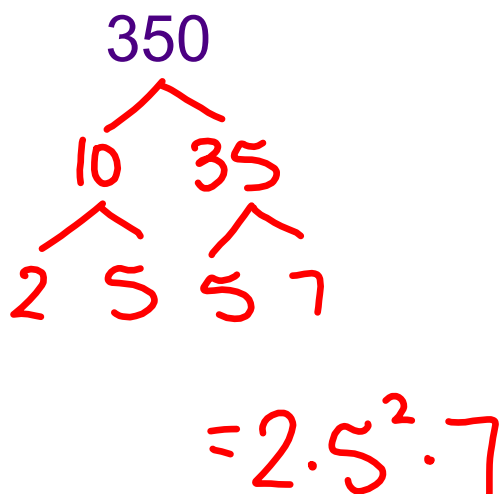2.) Solve $5 - 2x = 3x - 10$

$5 - 5x = -10$ $-5x = -15$
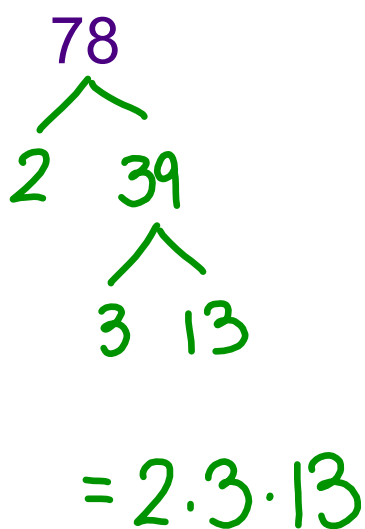 $x = 3$

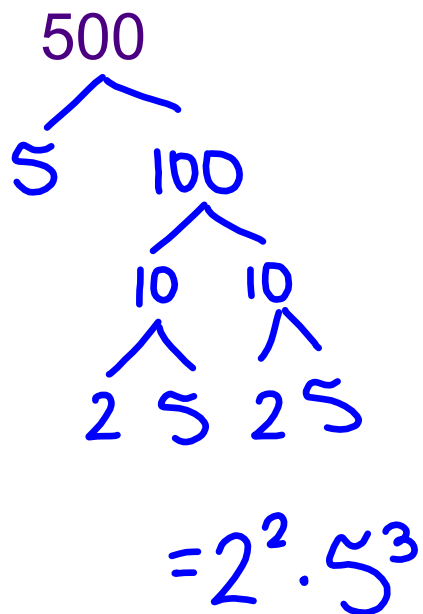3.) Solve $2(3)^x$ for $x = 3$

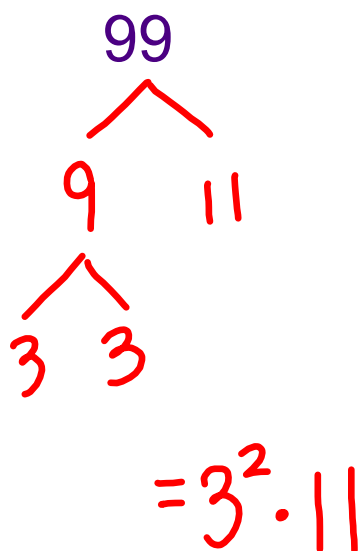$2(3)^3 = 2 \cdot 27$

$= 54$

Create a prime factorization tree.

$$350$$

$$10 \qquad 35$$

$$2 \quad 5 \quad 5 \quad 7$$

$$= 2 \cdot 5^2 \cdot 7$$

Create a prime factorization tree.

$$78$$

$$2 \quad 39$$

$$3 \quad 13$$

$$= 2 \cdot 3 \cdot 13$$

Create a prime factorization tree.

$$500$$

$$5 \qquad 100$$

$$10 \qquad 10$$

$$2 \quad 5 \quad 2 \quad 5$$

$$= 2^2 \cdot 5^3$$

Create a prime factorization tree.

$$99$$

$$9 \qquad 11$$

$$3 \quad 3$$

$$= 3^2 \cdot 11$$

Simplify.

$$\sqrt{169} = \sqrt{13 \cdot 13}$$
$$= 13$$

$$\sqrt{256} = \sqrt{16 \cdot 16}$$
$$= 16$$

Square Root Properties:

For any non-negative real numbers *a* and *b*:

$$\sqrt{ab} = \sqrt{a}\sqrt{b}$$

$$\sqrt{24}$$

Simplifying Square Roots:

1) Create a prime factorization tree for the number under the square root

2) Write the prime numbers in order under the square root (no exponents)

3) Circle the pairs of numbers

4) One of each of the circled pairs is placed outside the square root

5) Leave single numbers without a pair under the square root

6) Multiply the numbers outside the square root

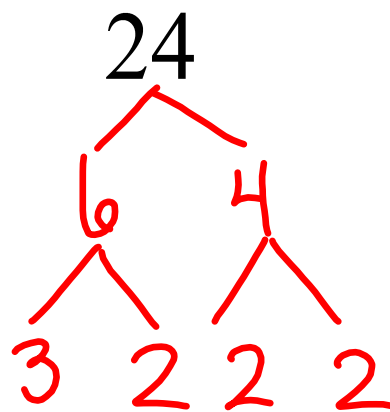7) If more than one number is left under the square root, multiply the numbers together

Factor Trees:

$\sqrt{24} =$

24

6   4

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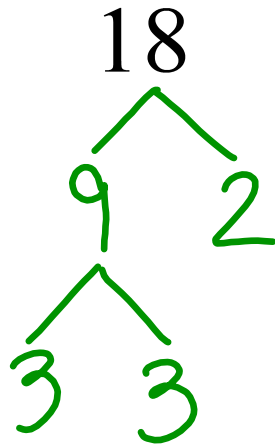
$\sqrt{2 \cdot 2 \cdot 2 \cdot 3}$

$= 2\sqrt{2 \cdot 3}$
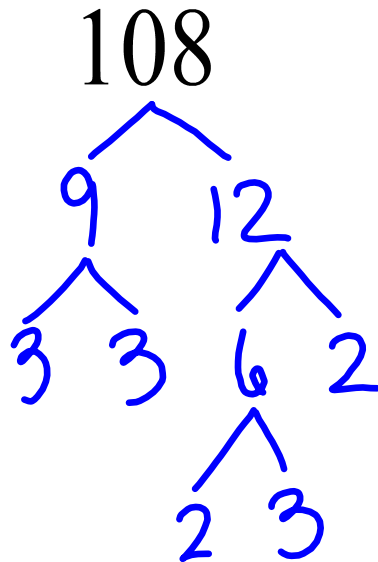
$= 2\sqrt{6}$

Factor Trees:

18

$\sqrt{18} =$

$= \sqrt{2 \cdot 3 \cdot 3}$

$= 3\sqrt{2}$

Factor Trees:

108

$\sqrt{108} =$

$= \sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3}$

$= 2 \cdot 3\sqrt{3}$

$= 6\sqrt{3}$

Assignment:

Simplifying Radicals

#1-10