

Today's Plan:

Learning Target (standard): I will use prime factorization trees to simplify radicals. I will then add or subtract radicals.

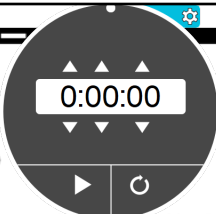
Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

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 _____



#157

BELL RINGER

1.) Tell whether the table represents an *exponential growth function*, an *exponential decay function*, or *neither*.

x	-2	-1	0	1
y	24	12	6	3

24, 12, 6, 3

2.) Write an equation in point-slope form of the line that passes through the given points (3, 1) and (-5, 7).

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 1}{-5 - 3} = \frac{6}{-8}$$

$$m = -\frac{3}{4}$$

3.) Evaluate $g(x) = x^2 - 1$ when $x = 4$

$$g(4) = (4)^2 - 1$$

$$= 16 - 1$$

$$g(4) = 15$$

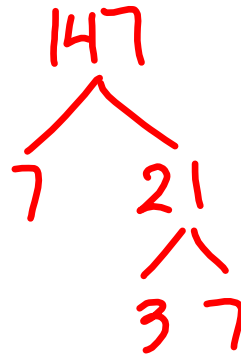
$$y - y_1 = m(x - x_1)$$

$$y - 1 = -\frac{3}{4}(x - 3)$$

$$y - 7 = -\frac{3}{4}(x + 5)$$

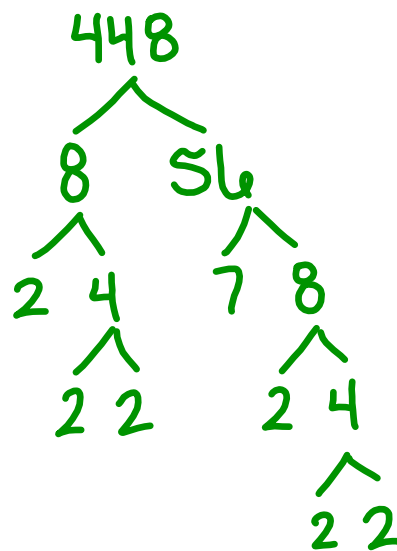
Simplify.

$$\begin{aligned}
 & -2\sqrt{147xy^4} \\
 & = -2\sqrt{3 \cdot 7 \cdot 7 \cdot x \cdot 4 \cdot 4 \cdot 4 \cdot 4} \\
 & = -2 \cdot 7 \cdot 4 \cdot 4 \sqrt{3 \cdot x} \\
 & = -14y^2\sqrt{3x}
 \end{aligned}$$



Simplify.

$$\begin{aligned}
 & 2\sqrt{448x^4y} \\
 & = 2\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 7 \cdot x \cdot x \cdot x \cdot x \cdot y} \\
 & = 2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \sqrt{7 \cdot y} \\
 & = 16x^2\sqrt{7y}
 \end{aligned}$$



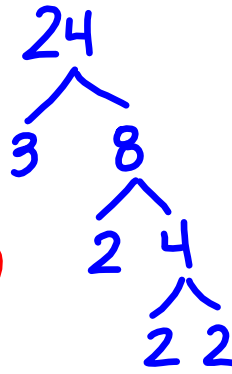
Simplify.

$$8\sqrt{24x^4y^4}$$

$$= 8\sqrt{2 \cdot 2 \cdot 2 \cdot 3 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y}$$

$$= 8 \cdot 2 \cdot x \cdot x \cdot y \cdot y \sqrt{2 \cdot 3}$$

$$= 16x^2y^2\sqrt{6}$$



Simplify.

$$-8\sqrt{196h^2j^2k^5}$$

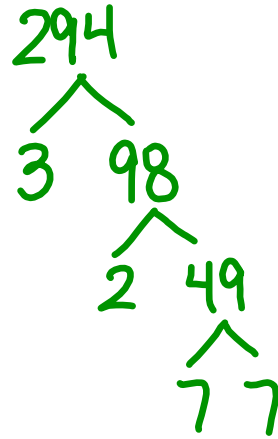
$$= -8 \cdot 14 \sqrt{h \cdot h \cdot j \cdot j \cdot k \cdot k \cdot k \cdot k \cdot k}$$

$$= -112hjk \cdot k \sqrt{k}$$

$$= -112hjk^2\sqrt{k}$$

Simplify.

$$\begin{aligned}
 & -5\sqrt{294xy^3z^4} \\
 & = -5\sqrt{2 \cdot 3 \cdot 7 \cdot 7 \cdot x \cdot y \cdot y \cdot y \cdot 2 \cdot 2 \cdot 2 \cdot 2} \\
 & = -5 \cdot 7 \cdot y \cdot 2 \cdot 2 \sqrt{2 \cdot 3 \cdot x \cdot y} \\
 & = -35yz^2\sqrt{6xy}
 \end{aligned}$$



Simplify.

$$\begin{aligned}
 & 5\sqrt{3} + 2\sqrt{75} \\
 & \quad \quad \quad \swarrow \quad \searrow \\
 & \quad \quad \quad 3 \quad 25 \\
 & \quad \quad \quad \quad \swarrow \quad \searrow \\
 & \quad \quad \quad \quad 5 \quad 5 \\
 & = 5\sqrt{3} + 2\sqrt{3 \cdot 5 \cdot 5} \\
 & = 5\sqrt{3} + 2 \cdot 5\sqrt{3} \\
 & = 5\sqrt{3} + 10\sqrt{3} \\
 & = 15\sqrt{3}
 \end{aligned}$$

Simplify.

$$3\sqrt{32} - 4\sqrt{63}$$

$\begin{array}{c} \wedge \\ 4 \quad 8 \\ \wedge \quad \wedge \\ 2 \quad 2 \quad 2 \quad 4 \\ \wedge \\ 2 \quad 2 \end{array}$
 $\begin{array}{c} \wedge \\ 7 \quad 9 \\ \wedge \\ 3 \quad 3 \end{array}$

$$= 3\sqrt{2 \cdot 2 \cdot 2 \cdot 2} - 4\sqrt{3 \cdot 3 \cdot 7}$$

$$= 3 \cdot 2 \cdot 2 \sqrt{2} - 4 \cdot 3 \sqrt{7}$$

$$= 12\sqrt{2} - 12\sqrt{7}$$

Simplify.

$$-11\sqrt{8} - 7\sqrt{12}$$

$$\begin{array}{c} 8 \\ \wedge \\ 2 \quad 4 \\ \wedge \\ 2 \quad 2 \end{array}$$

$$\begin{array}{c} 12 \\ \wedge \\ 4 \quad 3 \\ \wedge \\ 2 \quad 2 \end{array}$$

$$= -11\sqrt{2 \cdot 2 \cdot 2} - 7\sqrt{2 \cdot 2 \cdot 3}$$

$$= -11 \cdot 2\sqrt{2} - 7 \cdot 2\sqrt{3}$$

$$= -22\sqrt{2} - 14\sqrt{3}$$

Simplify.

$$\begin{aligned}
 & 7\sqrt{3} - 4\sqrt{6} + 2\sqrt{48} - \boxed{6\sqrt{54}} \\
 & = 7\sqrt{3} - 4\sqrt{2 \cdot 3} + 2\sqrt{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot 3} - 6\sqrt{2 \cdot \cancel{3} \cdot \cancel{3} \cdot 3} \\
 & = 7\sqrt{3} - 4\sqrt{6} + 2 \cdot 2 \cdot \sqrt{3} - 6 \cdot 3 \sqrt{2 \cdot 3} \\
 & = \underline{7\sqrt{3}} - \underline{4\sqrt{6}} + \underline{8\sqrt{3}} - \underline{18\sqrt{6}} \\
 & = 15\sqrt{3} - 22\sqrt{6}
 \end{aligned}$$

Assignment:

Addition & Subtraction of Radicals

Practice

#1-10