

Name: _____ Date: _____

Simplifying Radicals

Chrissy is solving the following problem:

Simplify the following radical: $\sqrt{24}$

She put $y = 24/x$ into her calculator. Explain how looking at the table can help Chrissy simplify.

X	Y1
0	ERROR
1	24
2	12
3	8
4	6
5	4.8
6	4
7	3.4286
8	3
9	2.6667
10	2.4

Aaron was asked to answer the following multiple choice question:

Write in simplest radical form $\sqrt{80} = 8.944\dots$

- 1) $2\sqrt{40} = 12.649\dots$
 - 2) $4\sqrt{5} = 8.944\dots$
 - 3) $2\sqrt{20} = 8.944\dots$
 - 4) $16\sqrt{5} = 35.777\dots$
- } ?

Aaron thinks TWO answers are right, based on what he found when he put the answers in his calculator. Explain which one is the correct answer and why.

Name: _____ Date: _____

Mixed Radical Review

1. Using the quadratic formula, find the roots of $x^2 - 5x - 4 = 0$ in simplest radical form

$$\begin{aligned} \text{Quadratic Formula} \\ = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \end{aligned}$$

4 and 1

$\frac{5 \pm \sqrt{41}}{2}$

$\frac{5 \pm \sqrt{21}}{2}$

$2 \pm 3\sqrt{7}$

Show work to justify your answer.

Marina was asked to simplify the following question in simplest radical form: $3\sqrt{175x^5}$

Her work is shown below, but her teacher marked it only *partially correct*.

$$\begin{aligned} & 3\sqrt{25x^4}\sqrt{5x} \\ & \downarrow \\ & 3 \cdot 5x^4 \sqrt{5x} \\ & \boxed{15x^4\sqrt{5x}} \end{aligned}$$

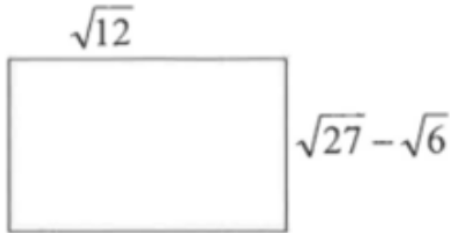
Explain what Marina did that was correct in the problem:

Can you find Marina's mistake? Explain why the final answer is wrong. Show work if it is helpful.

Name: _____ Date: _____

Adding & Subtracting Radicals

Find the perimeter of the following:



Self-Check

- Did I write a perimeter expression?
- Did I simplify so that I could combine "like radicals"?

Jacob solved the following problem. His work is shown below.

Simplify: $2\sqrt{27} + 3\sqrt{3} = 15.588\dots$

- (1) $3\sqrt{27} = 15.588\dots$
(2) $15\sqrt{30}$
(3) $9\sqrt{3}$
(4) $9\sqrt{8}$

Explain Jacob's strategy. Explain why is he still incorrect?

Name: _____ Date: _____

Multiplying & Dividing Radicals

Use your notes to complete the following:

Rationalize the denominator:

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

Explain, in your own words, what “rationalizing the denominator” means:

Now, using the steps in your notes, rationalize the denominator. Show all work.

Simplify the following expression: **Brianna began working on this problem, her work is shown below. Please finish her work:**

$$\begin{array}{c} \sqrt{4} (\sqrt{5} - 3\sqrt{4}) \\ \sqrt{20} - 3\sqrt{16} \\ \begin{array}{ccc} \swarrow & \searrow & \searrow \\ \sqrt{} & \sqrt{} & - 3 \cdot 4 \end{array} \end{array}$$