

May 2, 2012

Anything to correct?

$$5) (5k-6)(8k+5) = 0$$

$$\begin{array}{l|l} 5k-6=0 & 8k+5=0 \\ +6 & -5 \\ \hline 5k = 6 & 8k = -5 \\ \frac{5k}{5} = \frac{6}{5} & \frac{8k}{8} = \frac{-5}{8} \\ k = \frac{6}{5} & k = -\frac{5}{8} \end{array}$$

$$k = \frac{6}{5}, -\frac{5}{8}$$



5/2 - Simplifying Square Roots

What is a square root?

$$\sqrt{9} \\ = 3$$

What # times itself that gives you the # under the $\sqrt{\quad}$

$$\sqrt{9} = 3$$

$$\sqrt{64} = 8$$

$$\sqrt{25} = 5$$

$$\sqrt{144} = 12$$

$$\sqrt{16} = 4$$

$$\sqrt{256} = 16$$

How many "perfect squares" are there?

1, 4, 9, 16, 25, 36, 49, 64, 81,
100, 121, 144, 169, 196, 225, ...
infinite!

There are other "regular" square roots that are in between the perfect squares...

$$\sqrt{18}$$

$$\sqrt{24}$$

$$\sqrt{12}$$

$$\sqrt{50}$$

Break the number into factors so that one is a perfect square and the other is not, then simplify.

$$\begin{aligned}\sqrt{12} \\ &= \sqrt{4 \cdot 3} \\ &= 2\sqrt{3}\end{aligned}$$

$$\begin{aligned}\sqrt{18} \\ &= \sqrt{9 \cdot 2} \\ &= 3\sqrt{2}\end{aligned}$$

↑
part
has to be
last.

$$\begin{aligned}\sqrt{24} \\ &= \sqrt{4 \cdot 6} \\ &= 2\sqrt{6}\end{aligned}$$

$$\begin{aligned}\sqrt{50} \\ &= \sqrt{25 \cdot 2} \\ &= 5\sqrt{2}\end{aligned}$$

When the numbers get too big or when you can't find a perfect square, start using any small factors until it breaks down into something you recognize.

$$\begin{aligned} &\sqrt{128} \\ &\quad 2 \cdot 64 \\ &= 8\sqrt{2} \end{aligned}$$

$$\begin{array}{r} 49 \\ 5 \overline{)245} \\ \underline{20} \\ 45 \\ \underline{45} \\ 0 \end{array}$$

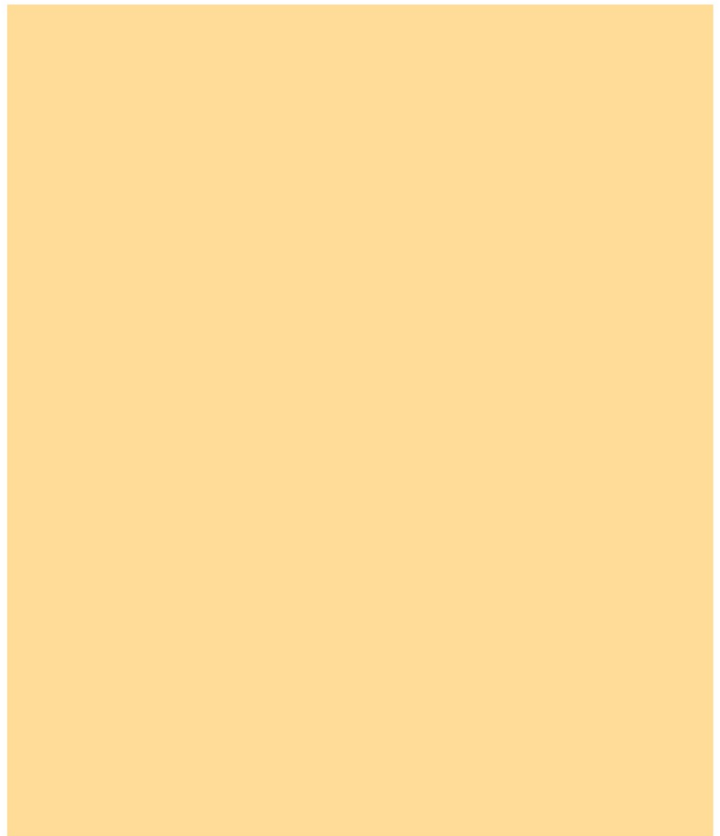
$$\begin{aligned} &\sqrt{245} \\ &\quad 5 \cdot 49 \\ &= 7\sqrt{5} \end{aligned}$$

$$\begin{array}{c}
 \sqrt{320} \\
 \begin{array}{c}
 \text{32} \quad \text{10} \\
 \text{16} \quad \text{2} \quad \text{2} \quad \text{5}
 \end{array} \\
 = 4 \cdot 2 \sqrt{5} \\
 = 8\sqrt{5}
 \end{array}$$

$$\begin{array}{c}
 \sqrt{252} \\
 \begin{array}{c}
 \text{2} \quad \text{126} \\
 \text{2} \quad \text{2} \quad \text{63} \\
 \text{9} \quad \text{7}
 \end{array} \\
 = 2 \cdot 3 \sqrt{7} \\
 = 6\sqrt{7}
 \end{array}$$

If there is a number in the front, just times simplify the square root then times both numbers out in front.

$$\begin{array}{c} 7\sqrt{8} \\ \swarrow \quad \searrow \quad \downarrow \\ 7 \cdot 2 \sqrt{2} \\ = 14\sqrt{2} \end{array}$$



$$\begin{aligned} & -3\sqrt{200} \\ & \quad \quad \quad \begin{array}{c} \text{100} \cdot 2 \\ \text{---} \quad \text{---} \end{array} \\ & = -3 \cdot 10 \sqrt{2} \\ & = -30\sqrt{2} \end{aligned}$$



Homework

Lilac Miscellaneous WS3

Due #1-14 due Thursday
#1-30 due Friday

