

Homework

Key

Unit 11: Radicals and Sequences
Simplifying & Estimating Practice- Day 2

Name: _____
Date: _____ Period: _____

Front Only

Determine between which two whole numbers does each of the following radicals falls:

1. $\sqrt{91}$ 9 + 10 $\begin{array}{r} 9 \\ \underline{81} \\ 10 \\ \underline{81} \\ 100 \end{array}$
2. $\sqrt{83}$ 9 + 10 $\begin{array}{r} 9 \\ \underline{81} \\ 10 \\ \underline{81} \\ 100 \end{array}$
3. $\sqrt{115}$ 10 + 11 $\begin{array}{r} 10 \\ \underline{100} \\ 11 \\ \underline{110} \\ 121 \end{array}$
4. $\sqrt{200}$ 14 + 15 $\begin{array}{r} 14 \\ \underline{196} \\ 15 \\ \underline{200} \\ 225 \end{array}$
5. $\sqrt{450}$ 21 + 22 $\begin{array}{r} 21 \\ \underline{441} \\ 22 \\ \underline{484} \end{array}$

Simplify the following radicals:

6. $2\sqrt{24} = 4\sqrt{6}$ $\begin{array}{r} 24 \\ \underline{2 \cdot 12} \\ 2 \cdot 6 \end{array}$
7. $3\sqrt{45} = 15\sqrt{5}$ $\begin{array}{r} 45 \\ \underline{3 \cdot 15} \\ 3 \cdot 3 \end{array}$
8. $17\sqrt{289} = 17 \cdot 17 = 289$ $\begin{array}{r} 289 \\ \underline{17 \cdot 17} \end{array}$
9. $4\sqrt{50} = 20\sqrt{2}$ $\begin{array}{r} 50 \\ \underline{2 \cdot 25} \\ 2 \cdot 5 \end{array}$
10. $3\sqrt{32} = 12\sqrt{2}$ $\begin{array}{r} 32 \\ \underline{3 \cdot 16} \\ 3 \cdot 4 \end{array}$

Simplify the following radicals to have a rational denominator:

11. $\frac{4}{\sqrt{5}} \left(\frac{\sqrt{5}}{\sqrt{5}} \right) = \frac{4\sqrt{5}}{5}$
12. $\frac{2}{\sqrt{16}} \left(\frac{\sqrt{16}}{\sqrt{16}} \right) = \frac{2}{4} = \frac{1}{2}$
13. $\frac{5}{\sqrt{10}} \left(\frac{\sqrt{10}}{\sqrt{10}} \right) = \frac{5\sqrt{10}}{10} = \frac{\sqrt{10}}{2}$
14. $\frac{3}{\sqrt{7}} \left(\frac{\sqrt{7}}{\sqrt{7}} \right) = \frac{3\sqrt{7}}{7}$
15. $\frac{2}{\sqrt{8}} = \frac{2}{2\sqrt{2}} = \frac{1}{\sqrt{2}} \left(\frac{\sqrt{2}}{\sqrt{2}} \right) = \frac{\sqrt{2}}{2}$