

Name: _____

Prime Factorization and Square Roots

Use prime factors to find the square roots for the following numbers.

$$\begin{array}{c} \text{a) } \sqrt{16} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right) \times \left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \text{x} \\ \hline \hline \end{array}$$

$$\begin{array}{c} \text{b) } \sqrt{49} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \hline \end{array}$$

$$\begin{array}{c} \text{c) } \sqrt{36} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right) \times \left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \text{x} \\ \hline \hline \end{array}$$

$$\begin{array}{c} \text{d) } \sqrt{81} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right) \times \left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \text{x} \\ \hline \hline \end{array}$$

$$\begin{array}{c} \text{e) } \sqrt{121} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \hline \end{array}$$

$$\begin{array}{c} \text{f) } \sqrt{100} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right) \times \left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \text{x} \\ \hline \hline \end{array}$$

Bonus

$$\begin{array}{c} \text{g) } \sqrt{225} = \sqrt{\left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right) \times \left(\begin{array}{c} \text{ } \end{array} \begin{array}{c} \text{x} \end{array} \begin{array}{c} \text{ } \end{array} \right)} \\ \hline \text{x} \\ \hline \hline \end{array}$$