

Let's practice:

$$1. \sqrt{32} = \sqrt{16} \cdot \sqrt{2}$$

$$= \boxed{4\sqrt{2}}$$

$$2. 2\sqrt{64}$$

$$2 \cdot 8$$

$$\boxed{16}$$

$$3. 3\sqrt{20} = 3\sqrt{4} \cdot \sqrt{5}$$

$$= \boxed{6\sqrt{5}}$$

$$4. 3\sqrt{224} = 3\sqrt{16} \cdot \sqrt{14}$$

$$= \boxed{12\sqrt{14}}$$

Now you try. Simplify!

$$1) \sqrt{18} = \sqrt{2} \cdot \sqrt{9}$$

$$= \boxed{3\sqrt{2}}$$

$$2) \sqrt{45} = \sqrt{9} \cdot \sqrt{5}$$

$$= \boxed{3\sqrt{5}}$$

$$3) \sqrt{96} = \boxed{4\sqrt{6}}$$

$$\begin{array}{c} \wedge \\ 2 \cdot 48 \\ \wedge \\ 3 \cdot 16 \\ \wedge \\ \textcircled{4 \cdot 4} \end{array}$$

$$4) \sqrt{12} = \sqrt{4} \cdot \sqrt{3}$$

$$= \boxed{2\sqrt{3}}$$

$$5) \sqrt{81}$$

$$\boxed{9}$$

$$6) \sqrt{72} = \boxed{6\sqrt{2}}$$

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



$$7) 2\sqrt{400} = 2\sqrt{100 \cdot 4}$$

$$= 2 \cdot 10 \cdot 2$$

$$= \boxed{40}$$

$$8) \sqrt{175} = \boxed{5\sqrt{7}}$$

$$\begin{array}{c} \wedge \\ 25 \cdot 7 \\ \wedge \\ \textcircled{5 \cdot 5} \end{array}$$

$$9) \sqrt{98} = \sqrt{49 \cdot 2}$$

$$= \boxed{7\sqrt{2}}$$

$$10) \sqrt{14}$$

$$11) 5\sqrt{64}$$

$$5(8)$$

$$\boxed{40}$$

$$12) \sqrt{44} = \boxed{2\sqrt{11}}$$

$$\begin{array}{c} \wedge \\ 2 \cdot 22 \\ \wedge \\ 2 \cdot 11 \end{array}$$

$$13) \sqrt{46}$$

$$\begin{array}{c} \wedge \\ 2 \cdot 23 \end{array}$$

$$14) \sqrt{144} = \boxed{12}$$

$$15) \sqrt{88} = \boxed{2\sqrt{22}}$$

$$\begin{array}{c} \wedge \\ 8 \cdot 11 \\ \wedge \\ 2 \cdot 4 \\ \wedge \\ \textcircled{2 \cdot 2} \end{array}$$

$$16) 3\sqrt{16}$$

$$3(4)$$

$$\boxed{12}$$

$$17) 2\sqrt{200} = \boxed{20\sqrt{2}}$$

$$\begin{array}{c} \wedge \\ 50 \cdot 4 \\ \wedge \quad \wedge \\ 25 \cdot 2 \quad \textcircled{2 \cdot 2} \\ \wedge \\ \textcircled{5 \cdot 5} \end{array}$$

$$18) 2\sqrt{81}$$

$$2(9)$$

$$\boxed{18}$$