

Simplifying Radicals

$$\sqrt{4} = 2 \quad \sqrt{9} = 3$$

$$\sqrt{8} = \sqrt{4} \sqrt{2} = \boxed{2\sqrt{2}}$$

$$\sqrt{20} = \sqrt{4} \sqrt{5} = \boxed{2\sqrt{5}}$$

$$\sqrt{40} = \sqrt{4} \sqrt{10} = \boxed{2\sqrt{10}}$$

$$\sqrt{200} = \sqrt{100} \sqrt{2} = \boxed{10\sqrt{2}}$$

$$\begin{aligned} \sqrt{180p^2} &= \sqrt{36} \sqrt{5} \sqrt{p^2} \\ &= \boxed{6p\sqrt{5}} \end{aligned}$$

$$\sqrt{x^4 y^2 z^4} = \boxed{x^2 y z^2}$$

$$\sqrt{98} = \sqrt{49} \sqrt{2} = \boxed{7\sqrt{2}}$$

$$\sqrt{54} = \sqrt{9} \sqrt{6} = \boxed{3\sqrt{6}}$$

$$3\sqrt{8} = 3 \cdot 2\sqrt{2} = \boxed{6\sqrt{2}}$$

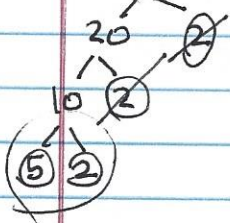
$$\begin{aligned} 5\sqrt{800} &= 5 \cdot \sqrt{400} \sqrt{2} = 5 \cdot 20\sqrt{2} \\ &= \boxed{100\sqrt{2}} \end{aligned}$$

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

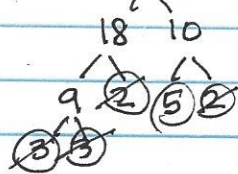
$$\begin{aligned} \sqrt{256ab^4} &= \sqrt{256} \sqrt{a} \sqrt{b^4} \\ &= \boxed{16b^2\sqrt{a}} \end{aligned}$$

$$\sqrt{45x^4y^7z^3} = \sqrt{9} \sqrt{5} \sqrt{x^4} \sqrt{y^6} \sqrt{y} \sqrt{z^2} \sqrt{z} = \boxed{3x^2y^3z\sqrt{5yz}}$$

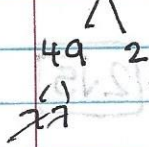
$$\sqrt{40} = \boxed{2\sqrt{10}}$$



$$\sqrt{180} = 3 \cdot 2\sqrt{5} = \boxed{6\sqrt{5}}$$



$$\sqrt{98m^3n^2} = 7\sqrt{2} \sqrt{m^2} \sqrt{m} \sqrt{n^2} = \boxed{7mn\sqrt{2m}}$$



$$\sqrt{108} = 3 \cdot 2\sqrt{3} = \boxed{6\sqrt{3}}$$

