## Mixed to Entire Radicals

Ex 1) Write the following numbers as a radical:
a) $4 \sqrt{16}$ or $\sqrt{4.4}$
b) $11 \sqrt{121}$ or $\sqrt{11 \cdot 11}$

Ex 2) Express as an entire radical:
$\begin{aligned} 4 \sqrt{3} & =\sqrt{4 \cdot 4 \cdot 3}=\sqrt{16 \cdot 3}=\sqrt{48}\end{aligned}$
$\begin{aligned} 6 \sqrt{5} & =\sqrt{6 \cdot 6 \cdot 5}=\sqrt{180} \\ & =\sqrt{36 \cdot 5}\end{aligned}$
$\begin{aligned} 2 \sqrt{7} & =\sqrt{2 \cdot 2 \cdot 7}=\sqrt{28} \\ & =\sqrt{4 \cdot 7}\end{aligned}$
$\begin{aligned} 5 \sqrt{2} & =\sqrt{5 \cdot 5 \cdot 2}=\sqrt{50} \\ & =\sqrt{25 \cdot 2}=\sqrt{50}\end{aligned}$
$\begin{aligned} 3 \sqrt[3]{3} & =\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 3}=\sqrt[3]{81} \\ 2 \sqrt[3]{4} & =\sqrt[3]{27 \cdot 3} \\ & =\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 4}=\sqrt[3]{32}\end{aligned}$
$\begin{aligned} 4 \sqrt[3]{2} & =\sqrt[3]{4 \cdot 4 \cdot 4 \cdot 2}=3 \sqrt{128} \\ & =\sqrt[3]{64 \cdot 2}\end{aligned}$
$\begin{aligned} 5 \sqrt[3]{2} & =\sqrt[3]{5 \cdot 5 \cdot 5 \cdot 2}=\sqrt[3]{250} \\ & =\sqrt[3]{125 \cdot 2}\end{aligned}$
Ex 3) Arrange in order from least to greatest:
$3 \sqrt{2}, 4 \sqrt{5}, 2 \sqrt{10}, 3 \sqrt{6}, \sqrt{24}$
$\sqrt{9 \cdot 2} \sqrt{16 \cdot 5} \sqrt{4 \cdot 10} \sqrt{9 \cdot 6}$
$\sqrt{18} \sqrt{80} \sqrt{40} \sqrt{54}$
$3 \sqrt{2}, \sqrt{24}, 2 \sqrt{10}, 3 \sqrt{6}, 4 \sqrt{5}$

