Mixed to Entire Radicals

Ex 1) Write the following numbers as a radical:

a) 4 $\sqrt{16}$ or $\sqrt{4 \cdot 4}$

b) 11 $\sqrt{121}$ or $\sqrt{11 \cdot 11}$

Ex 2) Express as an entire radical:

$4\sqrt{3} \quad = \sqrt{4 \cdot 4 \cdot 3} \quad = \sqrt{48}$
$\quad\quad = \sqrt{16 \cdot 3}$

$6\sqrt{5} \quad = \sqrt{6 \cdot 6 \cdot 5} \quad = \sqrt{180}$
$\quad\quad = \sqrt{36 \cdot 5}$

$2\sqrt{7} \quad = \sqrt{2 \cdot 2 \cdot 7} \quad = \sqrt{28}$
$\quad\quad = \sqrt{4 \cdot 7}$

$5\sqrt{2} \quad = \sqrt{5 \cdot 5 \cdot 2} \quad = \sqrt{50}$
$\quad\quad = \sqrt{25 \cdot 2}$

$3\sqrt[3]{3} \quad = \sqrt[3]{3 \cdot 3 \cdot 3 \cdot 3} \quad = \sqrt[3]{81}$
$\quad\quad = \sqrt[3]{27 \cdot 3}$

$2\sqrt[3]{4} \quad = \sqrt[3]{2 \cdot 2 \cdot 2 \cdot 4} \quad = \sqrt[3]{32}$
$\quad\quad = \sqrt[3]{8 \cdot 4}$

$4\sqrt[3]{2} \quad = \sqrt[3]{4 \cdot 4 \cdot 4 \cdot 2} \quad = \sqrt[3]{128}$
$\quad\quad = \sqrt[3]{64 \cdot 2}$

$5\sqrt[3]{2} \quad = \sqrt[3]{5 \cdot 5 \cdot 5 \cdot 2} \quad = \sqrt[3]{250}$
$\quad\quad = \sqrt[3]{125 \cdot 2}$

Ex 3) Arrange in order from least to greatest:

$3\sqrt{2}, \ 4\sqrt{5}, \ 2\sqrt{10}, \ 3\sqrt{6}, \ \sqrt{24}$

$\sqrt{9 \cdot 2} \quad \sqrt{16 \cdot 5} \quad \sqrt{4 \cdot 10} \quad \sqrt{9 \cdot 6}$

$\sqrt{18} \quad \sqrt{80} \quad\quad \sqrt{40} \quad\quad \sqrt{54}$

$3\sqrt{2}, \ \sqrt{24}, \ 2\sqrt{10}, \ 3\sqrt{6}, \ 4\sqrt{5}$