Simplifying Radicals Quiz /18

**Show all your work in a clear, easy to follow manner, for full marks**.

1. The expression $\sqrt{x-3}$ is only valid for certain values of x. State the restriction and explain clearly why this expression has a restriction. 2 marks

2. Order the following radicals from least to greatest **without a calculator**. Justify your answer. 4 marks

 $\sqrt{30}$ $2\sqrt{7}$ $3\sqrt{3}$ $4\sqrt{2}$

3. Simplify. **All variables are non-negative values**. 12 marks

a) $\sqrt{49x^{2}y^{4}}$ b) $\sqrt{48}$

c) $\sqrt[3]{40}$ d) $-5\sqrt{72x^{3}}$

e) $\frac{2x^{2}\sqrt{12x^{5}}}{3x\sqrt{16x^{6}}}$ f) $\sqrt[5]{1701x^{6}y^{2}}$