

6) Simplify each expression. Assume all variables represent positive real numbers. Write answers with only positive exponents.

$$a) (2x^{-1})^3(x^2)^{3/2} = 2^3 x^{-3} \cdot x^3 = 2^3 \cdot x^0 = 2^3 = 8$$

$$b) x^{3/2}(x^{1/2} + 4x^{-1/2}) = x^{4/2} + 4x^{2/2} \\ = x^2 + 4x$$

$$7) \text{ Simplify: } \sqrt{49-16} = \sqrt{33}$$

$$8) \text{ Rationalize the denominator } \frac{5}{1+\sqrt{3}} \cdot \frac{1-\sqrt{3}}{1-\sqrt{3}} = \frac{5(1-\sqrt{3})}{1-3} \\ = \frac{5(1-\sqrt{3})}{-2} = \frac{-5(1-\sqrt{3})}{2} = \frac{-5+5\sqrt{3}}{2}$$