

$$44. \left[\left(\frac{2x^2}{4y} \right)^{-3} \right]^2$$

$$\left(\frac{2x^2}{4y} \right)^{-6}$$

$$\left(\frac{4y}{2x^2} \right)^6$$

$$\frac{(4)^6 (y)^6}{(2)^6 (x^2)^6}$$

$$\frac{4096 y^6}{64 x^{12}}$$

$$\frac{64 y^6}{x^{12}}$$

58.

$$(5ab^2)(a^{-3}b^0)(2a^0b)^{-2}$$

$$(5ab^2)(a^{-3})(2b)^{-2}$$

$$(5ab^2)(a^{-3})(2)^{-2}(b)^{-2}$$

$$\left(\frac{5a^1 b^2}{4} \right) (a^{-3}) \left(\frac{1}{4} b^{-2} \right)$$

$$\frac{5}{4} a^{-2} b^0$$

$$\frac{5}{4a^2}$$

$$x^0 \left(\frac{5s^5}{t^5} \right) \left(\frac{3s^{-2}}{50t^4} \right)$$

$$\left(\frac{5s^5}{t^5} \right) \left(\frac{3t}{50s^2} \right)$$

$$\frac{3s^3 t}{10s^2 t^4}$$

$$\frac{3s^3}{10t^4}$$

$$\frac{15s^5 t}{50s^2 t^5}$$

$$\frac{3s^3}{10t^4}$$

5.2 Rational Exponents

$$x^{\frac{a}{b}} = \sqrt[b]{x^a}$$

$$x^{\frac{4}{5}} = \sqrt[5]{x^4}$$

$$\text{Ex: } \sqrt[4]{81} = 81^{\frac{1}{4}}$$

$81 \wedge (1/4)$
 $= 3$

$$\text{Ex: } \sqrt{\frac{25}{64}} = \left(\frac{25}{64}\right)^{\frac{1}{2}} = \frac{25^{\frac{1}{2}}}{64^{\frac{1}{2}}}$$

$$\left(\frac{25}{64}\right) \wedge (1/2)$$

$\left(\frac{5}{8}\right)$

$$\text{Ex: } \sqrt{-100}$$

No sol.

You cannot take an even root of a negative number.

Evaluating functions

$$f(x) = 3\sqrt{2x}$$

$$f(0)$$

$$3\sqrt{2(0)}$$

$$3\sqrt{0}$$

$$0$$

$$f(2)$$

$$3\sqrt{2(2)}$$

$$3\sqrt{4}$$

$$3 \cdot 2$$

$$6$$

$$f(-1)$$

$$3\sqrt{2(-1)}$$

$$3\sqrt{-2}$$

No sol.

Domain: possible
x-values

1. zero in denominator
2. negative under
even root.

Find the domain of

$$f(x) = \sqrt{5x+30} \quad -2$$

$$5x+30 > 0$$
$$\begin{array}{r} -30 \quad -30 \\ \hline \end{array}$$

$$\frac{5x}{5} \geq \frac{-30}{5}$$

$$x \geq -6$$

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