



Air maths tuition

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## Indices (Exponents) - Fractions to Negative Powers

$$x^{-n} = \frac{1}{x^n}$$

$$\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$$

$$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$$

$$\left(\frac{3}{4}\right)^{-3} = \left(\frac{4}{3}\right)^3 = \frac{64}{27}$$

$$\left(\frac{2}{3}\right)^{-2} = \frac{1}{\left(\frac{2}{3}\right)^2}$$

$$\left(\frac{2}{5}\right)^{-1} = \left(\frac{5}{2}\right)^1 = \frac{5}{2}$$

$$= \frac{1}{\frac{2^2}{3^2}} \times \frac{3^2}{3^2}$$

$$\left(3\frac{1}{2}x^3\right)^{-2} = \left(\frac{7x^3}{2}\right)^{-2}$$

$$= \frac{3^2}{2^2}$$

$$= \left(\frac{2}{7x^3}\right)^2$$

$$= \left(\frac{3}{2}\right)^2$$

$$= \frac{4}{49x^6}$$

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