



QT Tough Questions - Indices

Find the value of x

$$\frac{1}{\sqrt{9}} = \frac{1}{3}$$

$$9^{-\frac{1}{2}} = 27^{\frac{1}{4}} \div 3^{x+1}$$

$$\frac{1}{3} = \frac{(3^3)^{\frac{1}{4}}}{3^{x+1}}$$

$$3^{x+1} = 3(3^3)^{\frac{1}{4}}$$

$$3^{x+1} = 3^1 \times (3^3)^{\frac{1}{4}}$$

$$3^{x+1} = 3^1 \times 3^{\frac{3}{4}}$$

$$3^{x+1} = 3^{1+\frac{3}{4}}$$

$$3^{x+1} = 3^{\frac{7}{4}+1}$$

$$\underline{\underline{x = \frac{3}{4}}}$$