

Indices

Advanced 1

Please revise Level 3

$$\text{i) } \left(\frac{9x^3}{y^{-2}} \right)^{-1/2}$$

$$\text{ii) } \left(\frac{a^{-1/2}}{4c^2} \right)^{-2}$$

$$\text{iii) } \left(\frac{m^3 n^{-2}}{m^{-1} n^3} \right)^2$$

$$\text{iv) } \left(\frac{2x^{-2}}{3y} \right)^{-1}$$

$$\text{v) } \left(\frac{27x^3}{8a^{-3}} \right)^{-2/3}$$

$$\text{vi) } \sqrt{\frac{16x^2}{y^{-1}}}$$

$$\text{vii) } \sqrt{\frac{(4e)^{-1}}{(2e)^{-2}}}$$

$$\text{viii) } \sqrt{\frac{25x^4}{16}} \times \left(\frac{x}{2} \right)^{-3}$$

$$\text{ix) } \left(\frac{a^{-2}b}{ab^{-1}} \right)^{-2} \div \left(\frac{ab^2}{a^{-1}b^3} \right)^3$$

$$\text{x) } \left(\frac{x^2 y^{-1}}{2x^{-3} y^2} \right)^{-3} \div \left(\frac{2x^{-1} y^2}{x^3 y^{-4}} \right)^2$$

$$\text{xi) } \frac{5^{3n+2} - 10 \times 5^{n+1}}{125^n - 10 \times 5^{n-1}}$$

$$\text{xii) } \frac{4^n - 8 \times 6^n - 3^{2(n+1)}}{2^n - 3^{n+2}}$$

Indices with equations

$$\text{xiii) } 32 = 8^a$$

$$\text{xiv) } 2^x = 4^{2x-1}$$

$$\text{xv) } 4^{3t} = 8^{t-2}$$

$$\text{xvi) } 3^{5n+3} = 9^n$$

$$\text{xvii) } 4^x - 4^{x-1} = 24$$

$$\text{xviii) } 9^r - 4(3^{r+2}) + 243 = 0$$