

6. TYPE 2

Recognise with a + or – between the terms.

Give each exponent its own base

Look for a common exponent

$$\frac{3^{n+4} + 3^{n-1}}{3^{n+5}} = \frac{3^n \cdot 3^4 + 3^n \cdot 3^{-1}}{3^n \cdot 3^5} = \frac{3^n (3^4 + 3^{-1})}{3^n \cdot 3^5}$$

$$= \left(81 + \frac{1}{3}\right) \div 243$$

$$= \frac{244}{729}$$

7. TYPE 3

I classify exponential equations with an equal sign as type 3

Get all the x^{es} on one side

Make the bases the same and then drop them

Eg $2^x = 2^3$

$$x = 3$$

8. TYPE 4

Factorising exponential equations – I classify this as type 4

$$X^{\frac{1}{2}} - 5X^{\frac{1}{4}} + 6 = 0$$

$$(X^{\frac{1}{4}} - 2)(X^{\frac{1}{4}} - 3) = 0$$

$$X^{\frac{1}{4}} = 2 \quad \text{OR} \quad X^{\frac{1}{4}} = 3$$

$$X = 2^4 \quad \text{OR} \quad X = 3^4$$

$$X = 16 \quad \text{OR} \quad X = 81$$