

ALGEBRA: FRACTIONAL & NEGATIVE INDICES**Best Guess Mastery Worksheet (Target Grade 4/5)****I Do**

Simplify fully $\left(\frac{64x^9}{27y^6}\right)^{-\frac{2}{3}}$

.....

We Do

Simplify fully $\left(\frac{8a^6}{125b^9}\right)^{-\frac{2}{3}}$

.....

You Do 1

Simplify fully $\left(\frac{27m^6}{8n^{12}}\right)^{-\frac{2}{3}}$

.....

ALGEBRA: FRACTIONAL & NEGATIVE INDICES**Best Guess Mastery Worksheet (Target Grade 4/5)****You Do 2**

Simplify fully $\left(\frac{32p^{10}}{243q^5}\right)^{-\frac{4}{5}}$

.....

Challenge 1

Simplify fully $\left(\frac{16u^8}{81v^4}\right)^{-\frac{3}{4}}$

.....

Challenge 2

Simplify fully $\left(\frac{25x^4}{36y^8}\right)^{-\frac{3}{2}}$

.....

Answers & Worked Solutions**I Do:**

1. Invert the fraction to remove the negative sign: $(\frac{27y^6}{64x^9})^{\frac{2}{3}}$
2. Apply cube root ($\frac{1}{3}$ power): $\frac{3y^2}{4x^3}$
3. Square the result (power of 2): $\frac{3^2y^4}{4^2x^6} = \frac{9y^4}{16x^6}$

We Do:

1. Invert fraction: $(\frac{125b^9}{8a^6})^{\frac{2}{3}}$
2. Cube root: $\frac{5b^3}{2a^2}$
3. Square: $\frac{25b^6}{4a^4}$

You Do 1:

1. Invert fraction: $(\frac{8n^{12}}{27m^6})^{\frac{2}{3}}$
2. Cube root: $\frac{2n^4}{3m^2}$
3. Square: $\frac{4n^8}{9m^4}$

You Do 2:

1. Invert fraction: $(\frac{243q^5}{32p^{10}})^{\frac{4}{5}}$
2. Fifth root: $\frac{3q}{2p^2}$
3. Raise to power of 4: $\frac{81q^4}{16p^8}$

Challenge 1:

1. Invert fraction: $(\frac{81v^4}{16u^8})^{\frac{3}{4}}$
2. Fourth root: $\frac{3v}{2u^2}$
3. Cube the result: $\frac{27v^3}{8u^6}$

Challenge 2:

1. Invert fraction: $\left(\frac{36y^8}{25x^4}\right)^{\frac{3}{2}}$

2. Square root: $\frac{6y^4}{5x^2}$

3. Cube the result: $\frac{216y^{12}}{125x^6}$