hegartymaths

"We are what we repeatedly do.

Excellence is not an act, but a habit."

hegartymaths

Manipulating powers (1)
Getting ready for A-Level Maths...

What you need...

- Your brain and attention
- A device to watch connected to internet
- A pen and paper
- Can do attitude

Manipulating powers (1)

Important rules

$$a^1 = a$$

$$a^0 = 1$$

$$a^m \times a^n = a^{m+n}$$

$$a^m \div a^n = \frac{a^m}{a^n} = a^{m-n}$$

$$(a^m)^n = a^{mn}$$

$$(ka^m)^n = k^n a^{mn}$$

$$a^{-m} = \frac{1}{a^m}$$

$$a^{\frac{1}{m}} = \sqrt[m]{a}$$

$$a^{\frac{n}{m}} = \left(\sqrt[m]{a}\right)^n$$

Manipulating powers (1)

My turn

Write 243 as a power of 3.

Your turn

Write 256 as a power of 4.

Manipulating powers (1)

My turn

Write $\dfrac{1}{243}$ as a power of 3.

Your turn

Write $\dfrac{1}{625}$ as a power of 5.

Manipulating powers (1)

My turn

Write 0.04 as a power of 5.

Your turn

Write 0.25 as a power of 2.

Manipulating powers (1)

My turn

Write 32 x 128 as a power of 2.

Your turn

Write 27 x 81 as a power of 3.

Manipulating powers (1)

My turn

Write 25^6 as a power of 5.

Your turn

Write 64^3 as a power of 2.

Manipulating powers (1)

My turn

Write $81^5 \times 27^2$ as a power of 3.

Your turn

Write $64^2 \times 16^7$ as a power of 2.

Manipulating powers (1)

My turn

Write $\dfrac{128^2}{32^5}$ as a power of 2.

Your turn

Write $\dfrac{243^3}{27^6}$ as a power of 3.

Manipulating powers (1)

My turn

Write $0.25^5 \times 0.5^4$ as a power of 2.

Your turn

Write $0.04^4 \times 0.2^3$ as a power of 5.

1. Write 216 as a power of 6.

2. Write $\dfrac{1}{128}$ as a power of 2.

3. Write 0.5 as a power of 2.

4. Write 25 x 625 as a power of 5.

5. Write 27^8 as a power of 3.

6. Write $25^4 \times 125^3$ as a power of 5.

7. Write $\dfrac{64^3}{32^4}$ as a power of 2.

8. Write $0.125^3 \times 0.5^5$ as a power of 2.

1. Write 216 as a power of 6. 6^3

2. Write $\dfrac{1}{128}$ as a power of 2. 2^{-7}

3. Write 0.5 as a power of 2. 2^{-1}

4. Write 25 x 625 as a power of 5. 5^6

5. Write 27^8 as a power of 3. 3^{24}

6. Write 25^4 x 125^3 as a power of 5. 5^{17}

7. Write $\dfrac{64^3}{32^4}$ as a power of 2. 2^{-2}

8. Write 0.125^3 x 0.5^5 as a power of 2. 2^{-14}