

YouTube Live Lessons

Getting ready for A-Level Maths...

"We are what we repeatedly do.

Excellence is not an act, but a habit."



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

Important rules

$$a^{1} = a$$

$$a^{0} = 1$$

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

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

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

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

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

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

<u>Your turn</u>

Evaluate:



My turn Evaluate:

 $64^{\frac{1}{3}}$



<u>Your turn</u>

Evaluate:

 $27^{\frac{2}{3}}$



Evaluate:





<u>Your turn</u>

Evaluate:

 $36^{-\frac{3}{2}}$

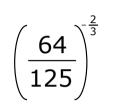


 $81^{-\frac{3}{4}}$



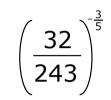
<u>My turn</u>

Evaluate:



Evaluate:

<u>Your turn</u>





<u>My turn</u>

Express the following in the form x^{n} .

 $\sqrt[3]{x^5}$

Your turn Express the following in the form x^n .

 $\sqrt[6]{x^7}$



<u>My turn</u>

Express the following in the form x^n .

 $\frac{\sqrt[5]{x}}{x}$

Express the following in the form x^{n} .

Your turn





<u>My turn</u>

Exam Q Your turn



Express the following in the form ax^n , where *a* is an integer.

$$\left(\frac{2}{\sqrt[7]{x}}\right)^5$$

Express the following in the form ax^n , where a is an integer.

$$\left(\frac{3}{\sqrt[9]{x}}\right)^4$$



<u>My turn</u>

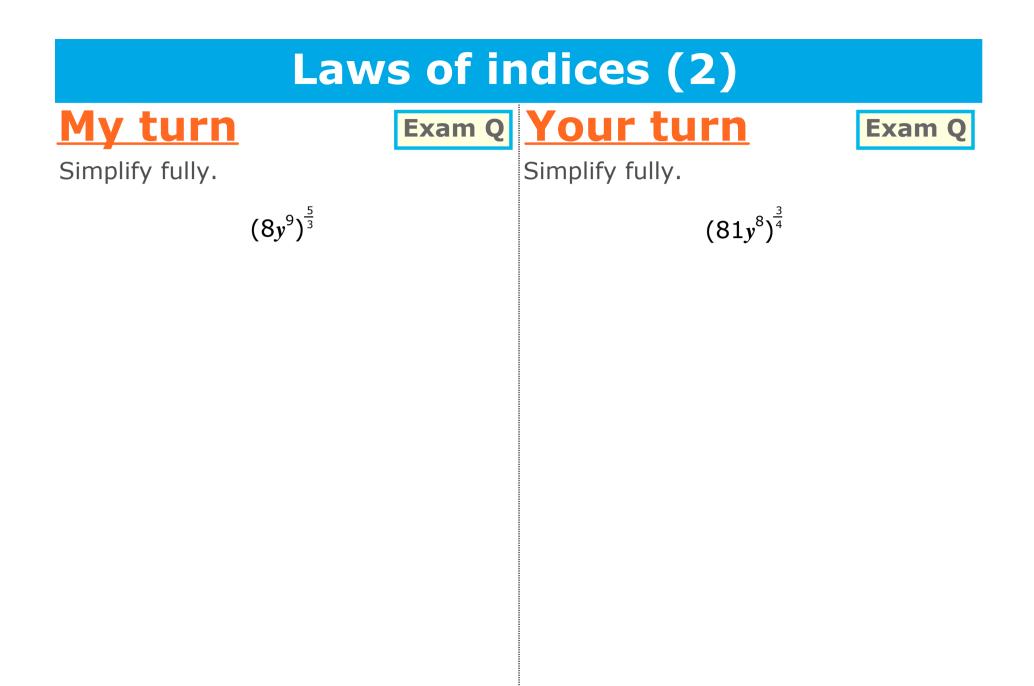
Exam Q Your turn



Express $7^{\frac{5}{2}}$ in the form $a\sqrt{b}$, where a is an integer and b is a prime number.

Express $5^{\frac{3}{2}}$ in the form $a\sqrt{b}$, where *a* is an integer and *b* is a prime number.





| Laws of indices (2) | |
|--|---|
| Review Exercise | |
| 1. Evaluate: $81^{\frac{1}{4}}$ 2. Evaluate: $36^{\frac{3}{2}}$ 3. Evaluate: $64^{-\frac{2}{3}}$ 4. Evaluate: $\left(\frac{81}{256}\right)^{\frac{3}{4}}$ | 6. Express the following in the form x^n . $\frac{\sqrt[4]{x}}{x}$ 7. Express the following in the form ax^n , where <i>a</i> is an integer. $\left(\frac{4}{\sqrt[5]{x}}\right)^3$ 8. Express $5^{\frac{7}{2}}$ in the form $a\sqrt{b}$, where <i>a</i> is an integer and <i>b</i> is a prime number. |
| 5. Express the following in the form x^n $\sqrt[7]{x^3}$ | 9. Simplify fully. $(32y^{10})^{\frac{6}{5}}$ |



Review Exercise (Answers)

| 1. Evaluate: 81 ^{¹/₄} 3 | 6. Express the following in the form x^n . $\frac{\sqrt[4]{x}}{\sqrt[4]{x}}$ $x^{-\frac{3}{4}}$ |
|--|--|
| 2. Evaluate: $36^{\frac{3}{2}}$ 216 | x 7. Express the following in the form axⁿ, where a is an integer. |
| 3. Evaluate: $\frac{1}{64^{-\frac{2}{3}}}$ 16 | $\left(\frac{4}{\sqrt[5]{x}}\right)^3 \qquad 64x^{-\frac{3}{5}}$ |
| 4. Evaluate: $\left(\frac{81}{256}\right)^{\frac{3}{4}}$ $\frac{64}{27}$ or $2\frac{10}{27}$ | 8. Express $5^{\frac{7}{2}}$ in the form $a\sqrt{b}$, where <i>a</i> is an integer and <i>b</i> is a prime number. $125\sqrt{5}$ |
| 5. Express the following in the form x^n . $\sqrt[7]{x^3}$ $x^{\frac{3}{7}}$ | |

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