

# 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>My turn</u>

Evaluate the following.

 $3^{-\frac{1}{5}} \times 3^{3} \times 3^{\frac{6}{5}}$ 

# <u>Your turn</u>

Evaluate the following.

$$5^{\frac{1}{3}} x 5^{4} x 5^{-\frac{7}{3}}$$



#### <u>My turn</u>

Simplify the following, leaving your answer in index form.

$$3^{-\frac{1}{5}} x 3^{4} x 3^{\frac{9}{5}}$$

# <u>Your turn</u>

Simplify the following, leaving your answer in index form.

 $5^{-\frac{1}{3}} x 5^2 x 5^{\frac{8}{3}}$ 



#### <u>My turn</u>

Simplify fully.

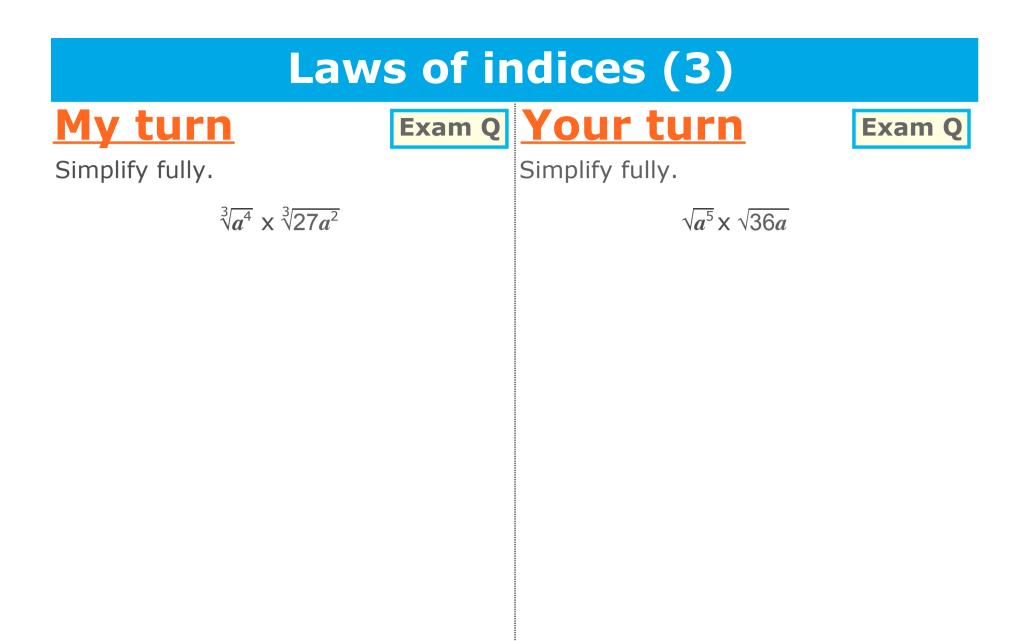
 $a^{\frac{2}{3}}b^{\frac{2}{5}} \times a^{\frac{4}{3}}b^{\frac{-12}{5}}$ 

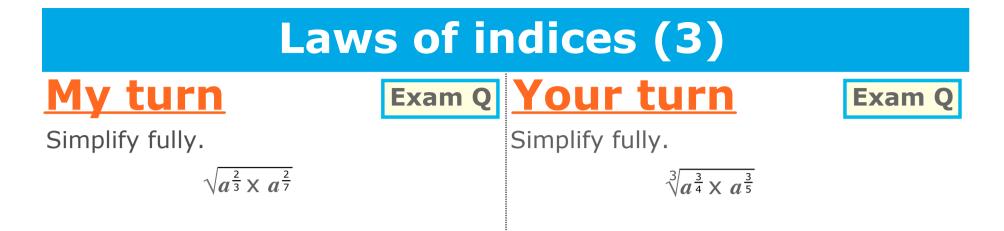
### <u>Your turn</u>

Simplify fully.

$$a^{\frac{9}{2}}b^{\frac{3}{4}} \times a^{\frac{7}{2}}b^{\frac{-27}{4}}$$









#### **Review Exercise**

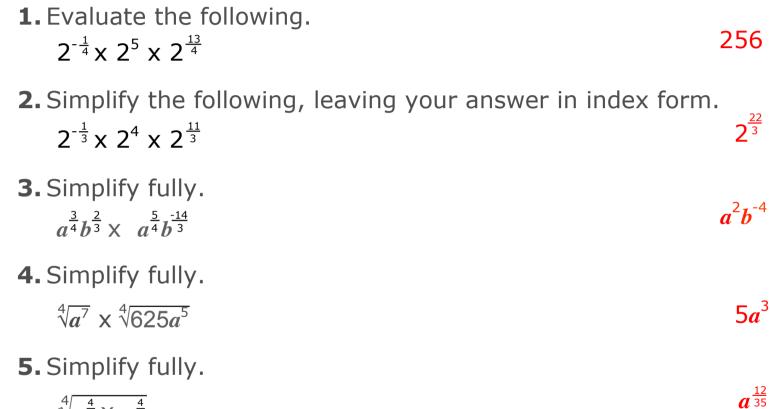
- **1.** Evaluate the following.  $2^{-\frac{1}{4}} \times 2^{5} \times 2^{\frac{13}{4}}$
- **2.** Simplify the following, leaving your answer in index form.  $2^{-\frac{1}{3}} \times 2^{4} \times 2^{\frac{11}{3}}$
- **3.** Simplify fully.  $a^{\frac{3}{4}}b^{\frac{2}{3}} \times a^{\frac{5}{4}}b^{\frac{-14}{3}}$
- 4. Simplify fully.

 $\sqrt[4]{a^7} \times \sqrt[4]{625a^5}$ 

**5.** Simplify fully.

$$\sqrt[4]{a^{\frac{4}{5}} \times a^{\frac{4}{7}}}$$

#### **Review Exercise (Answers)**



 $\sqrt[4]{a^{\frac{4}{5}} \times a^{\frac{4}{7}}}$ 

A hegartymaths