

# A-Level Starter Activity



## Topic: Simple Index Laws

Chapter Reference: Pure 1, Chapter 1

**8**  
**minutes**

1. Write down the value of  $32^{\frac{1}{5}}$  (1)

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2. Calculate  $16^{\frac{3}{4}}$  (2)

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3. Evaluate  $3^{-2}$  (1)

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4. Simplify fully  $(32x^5)^{-\frac{2}{5}}$  (3)

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5. Simplify fully  $\frac{(2x^{\frac{1}{2}})^3}{4x^2}$  (3)

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6. Work out  $\frac{3^{-5}}{3^{-4}} \times \frac{2^2}{2^{-1}}$  (2)

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## Solutions

1.

$32^{\frac{1}{5}} = \sqrt[5]{32} = 2$	<b>M1</b>
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2.

$16^{\frac{3}{4}} = (\sqrt[4]{16})^3$	<b>M1</b>
$= 2^3 = 8$	<b>M1</b>

3.

$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$	<b>M1</b>
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4.

$(32x^5)^{-\frac{2}{5}} = 32^{-\frac{2}{5}} x^{-2}$	<b>M1</b>
$= \frac{1}{32^{\frac{2}{5}}} \times \frac{1}{x^2}$	<b>M1</b>
$= \frac{1}{(\sqrt[5]{32})^2} \times \frac{1}{x^2}$	<b>M1</b>
$= \frac{1}{4x^2}$	<b>M1</b>

5.

$\frac{(2x^2)^3}{4x^2} = \frac{2^3(x^2)^3}{4x^2}$	<b>M1</b>
$= \frac{8x^6}{4x^2}$	<b>M1</b>
$= 2x^{\frac{6}{2}}$	<b>M1</b>

6.

$\frac{3^{-5}}{3^{-4}} \times \frac{2^2}{2^{-1}} = 3^1 \times 2^3$	<b>M1</b>
$= 3 \times 8 = 24$	<b>M1</b>

