**indices**

**A**

**Pythagroas**

**GRADE BUSTER**

*Your ‘5 a day’ mathematical workout*

1. Evaluate:

a) $4^{-1}$ b) $3^{-2}$ c) $16^{\frac{1}{2}}$ d)$ 8^{\frac{1}{3}}$

2. Evaluate:

a) $25^{-\frac{1}{2}}$ b)$ 1000^{-\frac{1}{3}}$ c)$ 27^{\frac{2}{3}}$

3. Find 3 different expressions involving fractional indices that have a value between 5 and 15.

4. i) Explain what is wrong with the following solution:

Evaluate:

*i)* $4^{-1}$ *= -* $\frac{1}{4}$

*ii)* $64^{\frac{2}{3}}$ *=* $\sqrt{64^{3}}$*=* $\sqrt{262144}$*= 512*

i) $4^{-1}$

ii) $64^{\frac{2}{3}}$

ii) Find the correct solutions

5) Place the following numbers in order from smallest to highest:

$3^{-1}$ $10^{-2}$ $16^{-\frac{1}{2}}$ $8^{\frac{1}{3}}$ $0.5^{0}$

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| Qu |  | ☺ | ☹ |
| 1a, 1b & 4 | I can evaluate negative indices |  |  |
| 1c, 1d, 3 & 4 | I can evaluate fractional indices |  |  |
| 2 & 5 | I can solve problems involving negative and fractional indices |  |  |

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| Top tips I must remember for the exam: |
| ☺☺☺ |
| Types of questions I need to practise more: |
| ☺☺☺ |