

Indices with Algebra

For each of the following, find the value of x.

Stages

- 1 Change all the numbers to a common base
- 2 Solve the indices as a linear equation

1 $2^3 \times 2^x = 64$

2 $5^5 \times 5^x = 625$

3 $8^x \times 16^3 = 4096$

4 $27^x \times 3^2 = 6561$

5 $64^{1/3} \times 16^x = 1024$

6 $32^3 \times 8^x = 8192$

7 $81^3 \times 243^x = 19683$

8 $16^x \times 32^2 = 4096$

9 $27^x \times 3^2 = 6561$

10 $256^{1/2} \times 64^x = 262144$

11 $16^{5x} = \frac{1}{1024}$

12 $7^{2x} \times 49 = \frac{1}{117649}$