**Indices**

1. a) What are the first eight prime numbers?

b) Write each of these numbers as a row of prime numbers multiplied together. E.g. 96 = 2 x 2 x 2 x 2 x 2 x 3

i) 180 ii) 168 iii) 990 iv) 33696

c) Write your answers to (b) using indices. E.g. 96 = 25 x 3

1. Find the values of;

a) 26 b) 62 c) 2 x 6 d) 34  e) 43

f) 4 x 3 g) 23 x 52 h) 33 x 102  i) 17 x 42

1. Simplify these. ***Don’t*** work out the values - give your answers using indices.

a) 25 x 26 b) 32 x 38 c) 52 x 54 x 55

d) 29 ÷ 24 e) 310 ÷ 34 f) (42 x 47) ÷ 45

g) (64)3 x 63 h) (43)² i) (86 x 89) ÷ (8 x 87)

1. Find the value of *n*

a) 72 x 7*n* = 76 b) 4*n*÷ 45  = 42

1. Copy and complete the table and use it to work out the following calculations.

*Power of 2 Value* a) 16 x 64

0 20 = 1

1 21 = 2 b) 128 x 32

2 22 = 4

3 23 = c) 8 x 8 x 32

4

5 d) 4 x 16 x 16

6

7 e) 256 ÷ 32

8

9 f) 1024 ÷ 64

10

11 g) (256 x 128) ÷ 1024

12

1. List the first 20 *Square Numbers*
2. List all the Cube Numbers up to and including 1000.
3. Square root the following numbers, giving your answers to 2 d.p.:-
4. 55
5. 80
6. 120
7. 160
8. 12
9. 200
10. Cube root the following numbers, giving your answers to 2 d.p.:-
11. 1331
12. 1000
13. 86
14. 52
15. 28
16. 333
17. Calculate the following:-
18. 3.52
19. 4.63
20. 6.92
21. 13.73
22. 64
23. 28
24. 85 ÷ 83
25. 42 ÷ 41
26. 163 × 162
27. 75 × 36
28. Find the value of x in each of these:-
29. 3x = 729
30. 7x = 2401
31. 2x = 32
32. 6x = 7776