

EXPONENT AND ROOTS 1

1) What is the value of "5 squared"? What is the cube of 7?

2) Calculate these numbers:

| | | |
|----------|----------|-------------|
| a) 2^5 | b) 8^2 | c) 7^4 |
| d) 3^4 | e) 5^3 | f) 1^{15} |

3) List all the square numbers between 110 and 200.

4) Write these numbers as one power:

| | | |
|---------------------|------------------------------|----------------|
| a) $2^3 \times 2^2$ | b) $3^4 \times 3^3 \times 3$ | c) $5^6 : 5^4$ |
| d) $(4^2)^3$ | e) $7^3 : 7$ | e) $(6^3)^3$ |

5) Complete:

| | | |
|-------------------------------|---------------------------|-------------------------------|
| a) $2^{[]} \times 2^5 = 2^7$ | b) $5^4 : 5^{[]} = 5$ | c) $(3^{[]})^3 = 3^{12}$ |
| d) $6^{[]} : 6^2 = 6^3$ | e) $(9^2)^{[]} = 9^{10}$ | f) $7^3 \times 7^{[]} = 7^9$ |

6) Which cube number is greater than 8000 and smaller than 9300?

7) Evaluate the following square roots without a calculator:

| | | |
|------------------|---------------------|------------------|
| a) $\sqrt{25}$ | b) $\sqrt{196}$ | c) $\sqrt{1600}$ |
| d) $\sqrt{8100}$ | e) $\sqrt{1000000}$ | f) $\sqrt{625}$ |

8) Find the following square roots by trial and improvement:

| | | |
|-----------------|------------------|------------------|
| a) $\sqrt{441}$ | b) $\sqrt{1296}$ | c) $\sqrt{3025}$ |
|-----------------|------------------|------------------|

9) Work out these operations:

| | | |
|-------------------------|------------------------------------|-------------------------|
| a) $2^5 \times (2^2)^2$ | b) $3^2 \times (2+1)^3 \times 3^4$ | c) $5^2 - 2^4$ |
| d) $(4^2)^3 \times 4^2$ | e) $7^3 + 7$ | f) $(4+1)^3 \times 5^2$ |

10) Work out these operations:

| | | |
|-------------------------------------|---------------------------------|--|
| a) $\frac{3^3 \times 3^2}{(3^2)^2}$ | b) $\frac{2^2 + 2^4}{5}$ | c) $\frac{5^2 \times 5 \times 5^6}{5^5}$ |
| d) $\frac{5^2 - 4^2}{3^2}$ | e) $\frac{(2+1)^2 \times 9}{3}$ | f) $\frac{(7^2)^3 \times 14 \times 2^4}{7^4 \times 2^3}$ |