

Using Index Notation

1. Write the following using index notation:

a. $3 \times 3 \times 3 \times 3 = 3^4$

b. $7 \times 7 \times 7 \times 7 \times 7 \times 7 = 7^6$

c. $4 \times 4 \times 4 = 4^3$

d. $10 \times 10 \times 10 \times 10 \times 10$
 $= 10^5$

e. $6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6$
 $= 6^7$

f. 34×34
 $= 34^2$

2. Write the following using index notation:

a. $y \times y \times y = y^3$

b. $p \times p \times p \times p \times p = p^5$

c. $s \times s \times s \times s = s^4$

d. $m \times m \times m \times n \times n$
 $= m^3 n^2$

e. $s \times t \times t \times t \times t$
 $= s t^4$

f. $a \times a \times b \times b \times a \times b$
 $= a^3 b^3$

3. Use your calculator to work out these values:

a. $4^5 = 1\ 024$

b. $10^3 = 1\ 000$

c. $3^8 = 6\ 561$

d. $1^{20} = 1$

e. $12^3 = 1\ 728$

f. $7^6 = 117\ 649$

g. $(-2)^6 = 64$

h. $20^2 = 400$

4. Use your calculator to work out these values:

a. $4^5 \times 3^2 = 9\ 216$

b. $7^3 \times 2^4 = 5\ 488$

c. $10^3 - 10^2 = 900$

d. $7^3 \div 2^6 = 5.36$

e. $5^8 + 4^2$

f. $1^3 \times 8^4$

g. $17^3 - 18^2$

h. $9^4 \div 3^8$

$= 390\ 641$

$= 4\ 096$

$= 4\ 589$

$= 1$

5. Without using a calculator, evaluate the following:

a. $8^2 = 64$

b. $10^4 = 10\ 000$

c. $1^6 = 1$

d. $12^1 = 12$

e. $2^5 = 32$

f. $(\frac{1}{2})^2 = 1/4$

g. $10^5 - 10^3$

h. $3^3 + 5^3 = 152$

$= 99\ 000$

6. Put the correct index (power) on the left hand side to make these equations equal:

a. $2^3 = 8$

b. $10^6 = 1\ 000\ 000$

c. $9^3 = 729$

d. $7^2 = 49$

e. $100^3 = 1\ 000\ 000$

f. $9^0 = 1$