EXPONENT RULES
SKILLS QUESTIONS

Q1. Complete the table below. Use your calculator to find each number as a power of 10. Some examples have been done to help you. Look for patterns. What do you notice?

NUMBER	NUMBER AS A POWER OF TEN
10	10^1
100	
1000	
100 000	
1 000 000	
1	10^0
0.1	10^{-1}
0.001	
0.0001	
$\sqrt[2]{10}$	$10^{½}$ or $10^{0.5}$
$\sqrt[3]{10}$	$10^{⅓}$
$\sqrt[2]{100}$	
$\sqrt[3]{1000}$	
$\frac{1}{\sqrt{10}}$	

Q2. What is the value of each of the following?
(a) 8^0 (b) 3^0 (c) 10^0 (d) x^0

Q3. What is the value of each of the following?
(a) 2^4 (b) 2^5 (c) 2^6 (d) 2^8
(e) 3^2 (f) 3^4 (g)3^5 (h) 3^6
(i) 5^3 (j) 5^4 (k) 6^3 (l) 6^4
(m) 7^3 (n) 8^3 (o) 9^4 (p) 10^5

Q4. Calculate each of the following:
(a)$\sqrt{100}$ (b) $\sqrt{144}$ (c) $\sqrt{169}$ (d) $\sqrt{225}$
(e)$\sqrt{196}$ (f) $\sqrt{256}$ (g) $\sqrt{625}$ (h) $\sqrt{400}$
(i) $9^{½}$ (j) $100^{0.5}$ (k) $8^{⅓}$ (l) $27^{⅓}$
(m)$10000^{0.25}$ (n) $81^{¼}$ (o) $100000^{⅕}$ (p) $64^{⅙}$

Q5. Find the value of each of these.
(a) $2^3 \times 4^2 \div 6^2$ (b) $2 \times 10^2 \times 3 \times 10^{-3} \div (2 \times 10^{-2})$
(c) $9^{½} \times 100^{0.5} \div 125^{⅓}$ (d) $(4^3 + 6^3) \div (2^3 - 4^{½})$

ANSWERS

Q2. All are equal to 1.

Q3.(a) 16
(b) 32
(c) 64
(d) 256
(e) 9
(f) 27
(g) 243
(h) 729
(i) 125
(j) 625
(k) 216
(l) 1296
(m) 343
(n) 512
(o) 6561
(p) 100 000

Q4.(a) 10
(b) 12
(c) 13
(d) 15
(e) 14
(f) 16
(g) 25
(h) 20
(i) 3
(j) 10
(k) 2
(l) 3
(m) 10
(n) 3
(o) 10
(p) 2

Q5.(a) 3.5
(b) 30
(c) 6
(d) 46.6