

Roots and Powers

$$2^2 = 2 \times 2$$

3² → Power Index
↓
Base value

Index form

$$4^2 = 4 \times 4 = 16$$

$$2^3 = 2 \times 2 \times 2 = 8$$

Calculator 4^2
number

$$[4] [x^2] = 4^2 = 16$$

Find 5^3 5 cubed

$$[5] [x^3] [=] 125$$

Find 2^6

$$[2] [x^{\square}] [6] = 64$$

Find 3×4^2

$$3 \times 16 = 48$$

ALWAYS WORK POWERS
OUT FIRST

Roots

$\sqrt{\quad}$ square root (Radical)

$\sqrt{9}$ Radical

Radical

$$\sqrt{9} = 3 \quad = 3^2 = 9$$

$$\text{or } -3 \quad (-3)^2 = 9$$

$$2^2 = 4$$

$$\sqrt{4} = 2$$

$$\sqrt{4} = 4^{1/2}$$

calculator

$$[4][x^{\square}][\frac{\square}{2}][=]$$

= 2

$$4^3 = 64$$

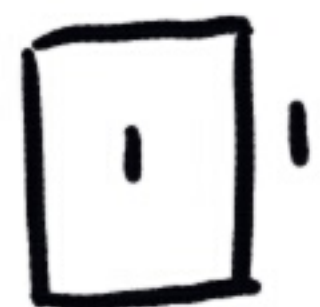





$$\sqrt[3]{64} \text{ [SHIFT] [}\sqrt{\square}\text{] [64] [=]} = 4$$

cubed root

$$\sqrt[3]{64} = 64^{1/3}$$

Pg 11 Q1 - 3

The perfect squares

					
1	2	3	4	5	6
1 ²	2 ²	3 ²	4 ²	5 ²	6 ²
1	4	9	16	25	36



$$7^2 = 49, 8^2 = 64, 9^2 = 81, 10^2 = 100$$

$$11^2 = 121, 12^2 = 144, 13^2 = 169$$

$$\sqrt{4} = 2, \sqrt{9} = 3, \sqrt{16} = 4, \sqrt{25} = 5$$

H/W pg 12

Q5 Q7 Q9

Q5 12-17, 30-40, 75, 84, 105-130
16 36 81 121

Q7 $2 \times 2 \times 2$
 $= 2^3$

$3 \times 3 \times 3$
 $= 3^3$

$6 \times 6 \times 6 \times 6$
 $= 6^4$

2×2^4
 $= 2^5$

Q4) 16
 $= 2^4$
 $= 4^2$

8
 2^3

27
 $= 3^3$

1000
 $= 10^3$

125
 5^3

121
 11^2

$$\begin{aligned} 8) \quad 3^2 \times 4^2 &= 12^2 \\ 9 \times 16 &= 144 \\ 144 &= 144 \quad \text{True} \end{aligned}$$

$$\begin{aligned} (2 \times 5)^2 &= 2^2 \times 5^2 \\ 10^2 &= 4 \times 25 \\ 100 &= 100 \quad \text{True} \end{aligned}$$

$$\begin{aligned} 3^2 + 4^2 &= (3+4)^2 \\ 9 + 16 &= (7)^2 \\ 25 &= 49 \quad \text{False} \end{aligned}$$

$$\begin{aligned} Q10) \quad \sqrt{9} &= 3 \\ \sqrt{25} &= 5 \\ \sqrt{64} &= 8 \\ \sqrt{144} &= 12 \\ \sqrt{400} &= 20 \end{aligned}$$

$$\begin{aligned} Q11) \quad \sqrt{49} &= 7 \\ \sqrt{\square} &= 9 \\ 81 & \\ 12 &= \sqrt{\square} \\ 144 & \\ 9 &= \sqrt{81} \\ \sqrt{\square} &= 8 \\ 64 & \\ \sqrt{\square} &= 1 \end{aligned}$$



$$Q12 \quad \frac{10^3}{\sqrt{100}} = \frac{1000}{10} = 100$$

$$\sqrt{81} + 3^2 \\ 9 + 9 = 18$$

$$\frac{\sqrt{100}}{5} = \frac{10}{5} = 2$$

$$\frac{3^2 \times \sqrt{81}}{3^3} = \frac{9 \times 9}{27} = \frac{81}{27} = 3$$

HW Pg 16 Q17

Pg 17 Q 18