

A number is '**cubed**' when it is multiplied by itself three times. X cubed is written as x^3 . The **cube root** of a number is one of three equal factors of that number. It is important to remember that there is ONE answer to every cube root. The symbol for cube root is $\sqrt[3]{x}$.

1. Write the first 20 cube numbers:

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2. Write the value for the CUBE of the following: (round to 2dp)

- a) 6 _____ b) 12 _____ c) 1.2 _____ d) 0.8 _____
 e) 1 _____ f) 2 _____ g) -3 _____ h) -1.5 _____
 i) -1 _____ j) 0.31 _____ k) $4\frac{1}{4}$ _____ l) 10 _____

3. Write the value for each of the following:

- a) $\sqrt[3]{1000} =$ _____ b) $\sqrt[3]{8} =$ _____ c) $\sqrt[3]{125} =$ _____ d) $\sqrt[3]{216} =$ _____
 e) $\sqrt[3]{343} =$ _____ f) $\sqrt[3]{729} =$ _____ g) $\sqrt[3]{512} =$ _____ h) $\sqrt[3]{64} =$ _____
 i) $\sqrt[3]{-1} =$ _____ j) $\sqrt[3]{-8} =$ _____ k) $\sqrt[3]{-64} =$ _____ l) $\sqrt[3]{-27} =$ _____

4. Write the value for each of the following: (round to 2dp)

- a) $\sqrt[3]{364} =$ _____ b) $\sqrt[3]{128} =$ _____ c) $\sqrt[3]{752} =$ _____ d) $\sqrt[3]{4900} =$ _____
 e) $\sqrt[3]{-7} =$ _____ f) $\sqrt[3]{386} =$ _____ g) $\sqrt[3]{89} =$ _____ h) $\sqrt[3]{998} =$ _____
 i) $\sqrt[3]{\frac{1}{2}} =$ _____ j) $\sqrt[3]{12.02} =$ _____ k) $\sqrt[3]{3\frac{4}{5}} =$ _____ l) $\sqrt[3]{0.008} =$ _____

5. What two whole numbers are each of the following answers between (don't use a calculator):

- a) $\sqrt[3]{5} =$ _____ b) $\sqrt[3]{36} =$ _____ c) $\sqrt[3]{146} =$ _____ d) $\sqrt[3]{9} =$ _____
 e) $\sqrt[3]{89} =$ _____ f) $\sqrt[3]{66} =$ _____ g) $\sqrt[3]{999} =$ _____ h) $\sqrt[3]{15} =$ _____

6. The following values are the result of cube rooting an integer. Write the two cube numbers that the original value is between :

- a) $3.556 =$ **27 & 64** b) $5.313 =$ _____ c) $4.447 =$ _____ d) $6.082 =$ _____
 e) $1.709 =$ _____ f) $8.434 =$ _____ g) $9.996 =$ _____ h) $1.442 =$ _____
 i) $2.441 =$ _____ j) $1.999 =$ _____ k) $5.121 =$ _____ l) $7.821 =$ _____

7. Complete the table below by finding the cube and the cube root for the values given (where possible, 1d.p.):

| x | 1 | -1 | 3.1 | -6 | 3.5 | $4\frac{1}{2}$ | 2 | 2.5 | $5\frac{1}{4}$ | -8 | 0 |
|---------------|---|----|-----|----|-----|----------------|---|-----|----------------|----|---|
| x^3 | | | | | | | | | | | |
| $\sqrt[3]{x}$ | | | | | | | | | | | |

8. Insert the **same number** under each cube root sign to get the answer shown: $\sqrt[3]{\quad} \times \sqrt[3]{\quad} - \sqrt[3]{\quad} = 12$