

Cube Numbers - Worksheet

Skill

Group A - Cubing positive numbers

Work out the following:

1) $2^3 =$

2) $5^3 =$

3) $6^3 =$

4) $9^3 =$

5) $12^3 =$

6) $15^3 =$

7) $0.5^3 =$

8) $0.3^3 =$

9) $3^3 + 4^3 =$

10) $3^3 \times 5^3 =$

11) $4^3 \times 2^3 \times 1^3 =$

12) $6^3 + 3^3 \times 4^3 =$

Group B - Cube rooting numbers

Work out the following:

1) $\sqrt[3]{8} =$

2) $\sqrt[3]{27} =$

3) $\sqrt[3]{1000} =$

4) $\sqrt[3]{512} =$

5) $\sqrt[3]{216} =$

6) $\sqrt[3]{729} =$

7) $\sqrt[3]{1} + \sqrt[3]{8} =$

8) $\sqrt[3]{216} \times \sqrt[3]{27} =$

9) $\sqrt[3]{512} \times \sqrt[3]{343} =$

10) $\sqrt[3]{512\,000} =$

11) $\sqrt[3]{0.125} =$

12) $\sqrt[3]{0.064} =$

Group C - Cubing and cube rooting negative numbers

Work out the following:

1) $\sqrt[3]{-8} =$

2) $\sqrt[3]{-1} =$

3) $\sqrt[3]{-64} =$

4) $(-2)^3 =$

5) $(-8)^3 =$

6) $(-12)^3 =$

7) $(-13)^3 =$

8) $\sqrt[3]{-1000} =$

9) $(-2)^3 \times \sqrt[3]{-27} =$

10) $(-1)^3 - \sqrt[3]{-64} =$

11) $\sqrt[3]{-27} - \sqrt[3]{-64} =$

12) $\sqrt[3]{-1} \times \sqrt[3]{-64} - \sqrt[3]{-8} =$

Cube Numbers - Worksheet

Applied

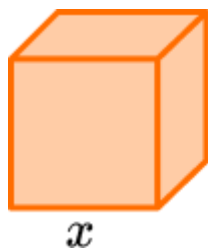
- 1) Below is a list of numbers:

1, 3, 5, 8, 16, 18, 25, 32, 45

From the list of numbers write down:

- (a) All the cube numbers
- (b) The cube root of 27
- (c) The cube root root of 5832

- 2) (a) Shown below is cube with a volume of 3375cm^3 .
Work out the value of x .



$\text{Volume} = 3375\text{cm}^3$

- (b) Work out the surface area of the cube above.
- 3) “The cube root of a number is always smaller than the starting number.”
Show that this statement is incorrect.
- 4) List 3 cube numbers that are also square numbers.

Cube Numbers - Exam Questions

1) (a) Work out the value of: 5^3
(1)

(b) 0.5^3
(1)

(c) $(-8)^3$
(1)
(3 marks)

2) (a) Work out the value of: $\sqrt[3]{27}$
(1)

(b) $\sqrt[3]{125} \times \sqrt[3]{64}$
(1)

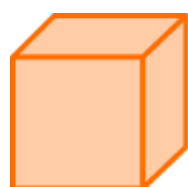
(c) $\sqrt[3]{-27} - \sqrt[3]{-8}$
(1)
(3 marks)

3) Arrange the values in order starting with the smallest.

$\sqrt{144}$, 2^3 , $\sqrt{81}$, $\sqrt[3]{343}$

.....
(3)
(3 marks)

4) (a) Here is a cube with a volume of 216mm^3
Work out the value of x .



$\text{Volume} = 216\text{mm}^3$

x

.....
(2)

(b) Work out the surface area of the cube.

.....
(2)
(4 marks)

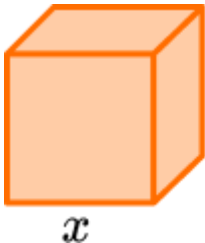
Cube Numbers - Answers

	Question	Answer
	Skill Questions	
Group A	Work out the following: 1) $2^3 =$ 2) $5^3 =$ 3) $6^3 =$ 4) $9^3 =$ 5) $12^3 =$ 6) $15^3 =$ 7) $0.5^3 =$ 8) $0.3^3 =$ 9) $3^3 + 4^3 =$ 10) $3^3 \times 5^3 =$ 11) $4^3 \times 2^3 \times 1^3 =$ 12) $6^3 + 3^3 \times 4^3 =$	1) 8 2) 125 3) 216 4) 729 5) 1728 6) 3375 7) 0.125 8) 0.027 9) 91 10) 3375 11) 512 12) 1944
Group B	Work out the following: 1) $\sqrt[3]{8} =$ 2) $\sqrt[3]{27} =$ 3) $\sqrt[3]{1000} =$ 4) $\sqrt[3]{512} =$ 5) $\sqrt[3]{216} =$ 6) $\sqrt[3]{729} =$ 7) $\sqrt[3]{1} + \sqrt[3]{8} =$ 8) $\sqrt[3]{216} \times \sqrt[3]{27} =$ 9) $\sqrt[3]{512} \times \sqrt[3]{343} =$ 10) $\sqrt[3]{512\,000} =$ 11) $\sqrt[3]{0.125} =$ 12) $\sqrt[3]{0.064} =$	1) 2 2) 3 3) 10 4) 8 5) 6 6) 9 7) 3 8) 18 9) 56 10) 80 11) 0.5 12) 0.4

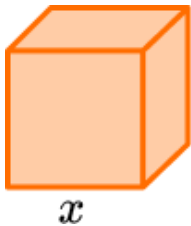
Cube Numbers - Answers

Group C	Work out the following: 1) $\sqrt[3]{-8} =$ 2) $\sqrt[3]{-1} =$ 3) $\sqrt[3]{-64} =$ 4) $(-2)^3 =$ 5) $(-8)^3 =$ 6) $(-12)^3 =$ 7) $(-13)^3 =$ 8) $\sqrt[3]{-1000} =$ 9) $(-2)^3 \times \sqrt[3]{-27} =$ 10) $(-1)^3 - \sqrt[3]{-64} =$ 11) $\sqrt[3]{-27} - \sqrt[3]{-64} =$ 12) $\sqrt[3]{-1} \times \sqrt[3]{-64} - \sqrt[3]{-8} =$	1) -2 2) -1 3) -4 4) -8 5) -512 6) -1728 7) -2197 8) -10 9) 24 10) 3 11) 1 12) 6
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Cube Numbers - Answers

	Question	Answer
	Applied Questions	
1)	Below is a list of numbers: 1, 3, 5, 8, 16, 18, 25, 32, 45 From the list of numbers write down: a) All the cube numbers b) The cube root of 27 c) The cube root root of 5832	a) 1, 8 b) 3 c) 18
2)	a) Shown below is cube with a volume of 3375cm^3. Work out the value of x.  $\text{Volume} = 3375\text{cm}^3$ b) Work out the surface area of the cube above.	a) 15cm b) 1350cm^2
3)	The cube root of a number is always smaller than the starting number. Show that this statement is incorrect.	The cube root of a negative integer is larger. e.g. $\sqrt[3]{-8} = -2$
4)	List 3 cube numbers that are also square numbers.	1, 64, 729

Cube Numbers - Mark Scheme

	Question	Answer	
	Exam Questions		
1) (a)	Work out the value of 5^3	(a) 125	(1)
(b)	0.5^3	(b) 0.125	(1)
(c)	$(-8)^3$	(c) - 512	(1)
2) (a)	Work out the value of: $\sqrt[3]{27}$	(a) 3	(1)
(b)	$\sqrt[3]{125} \times \sqrt[3]{64}$	(b) 20	(1)
(c)	$\sqrt[3]{-27} - \sqrt[3]{-8}$	(c) - 1	(1)
3)	Arrange the values in order starting with the smallest. $\sqrt{144}$, 2^3, $\sqrt{81}$, $\sqrt[3]{343}$,	$\sqrt{144} = 12$ or $\sqrt{81} = 9$ (1) $\sqrt[3]{343} = 7$ and $2^3 = 8$ (1) $\sqrt[3]{343}$, 2^3, $\sqrt{81}$, $\sqrt{144}$ (1)	(3)
4) (a)	Shown below is cube with a volume of 216mm^3. Work out the value of x.  <i>Volume = 216mm^3</i>	$\sqrt[3]{216}$ (1) 6mm (1)	(2)
(b)	Work out the surface area of the cube.	$(6 \times 6) \times 6$ (1) $= 216\text{mm}^2$ (1)	(2)

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