

Cubes and Cube Roots

MCQ Test, Set 03

Time: 30 minutes

Maximum marks: 25

Name: _____ Class: _____ Date: _____

1. There are 25 questions. Each has exactly one correct answer: choose A, B, C or D.
2. Each correct answer carries 1 mark. There is no negative marking.
3. The key sheet and worked solutions are at the end of this test.

1. 5^3 is the same as

A. $3 \times 3 \times 3 \times 3 \times 3$

B. 5×3

C. $5 \times 5 \times 5$

D. 5×5

2. $4 \times 4 \times 4 \times 5 \times 5 \times 5$ can be written as

A. 9^3

B. 12×15

C. $4^2 \times 5^2$

D. $4^3 \times 5^3$

3. p^3 is read as

A. p squared

B. 3 times p

C. p plus 3

D. p cubed

4. $\square^3 = 216$. The number in the box is

A. 72

B. 36

C. 6

D. 7

5. The smallest cube greater than 150 is

A. 343

B. 216

C. 125

D. 200

6. How many cubes of whole numbers lie between 100 and 600?

A. 5

B. 6

C. 4

D. 3

7. $8^3 =$

A. 24

B. 512

C. 729

D. 64

8. $40^3 =$

A. 1600

B. 64000

C. 6400

D. 120

9. A cube-shaped stack has 12 small cubes along each edge. The number of small cubes in it is

A. 1728

B. 144

C. 864

D. 36

10. $15^3 = 225 \times \square$. The number in the box is

A. 225

B. 15

C. 2

D. 3

11. $(-7)^3 =$

A. -343

B. 49

C. -21

D. -147

12.	If k is a positive number, then $(-k)^3$ is			
	A. negative	B. equal to k^3	C. positive	D. zero
13.	$(-9)^3 = -\square$. The number in the box is			
	A. 27	B. 1000	C. 81	D. 729
14.	$3^3 + 3^3 =$			
	A. 54	B. 27	C. 216	D. 729
15.	$2^3 + 3^3 + 4^3 + 5^3 =$			
	A. 2744	B. 224	C. 54	D. 99
16.	Two big cubes are made of small cubes, with 1 and 7 small cubes along each edge. How many small cubes are there in the two cubes together?			
	A. 300	B. 512	C. 344	D. 50
17.	$14^3 + (-14)^3 =$			
	A. 2×14^3	B. 0	C. 14^6	D. 14^3
18.	$(-1)^3 + 5^3 =$			
	A. 24	B. 126	C. 64	D. 124
19.	$(-2)^3 + 3^3 + (-1)^3 =$			
	A. 20	B. 0	C. 18	D. 36
20.	$10^3 - 11^3 =$			
	A. -2331	B. -1	C. -21	D. -331
21.	What must be added to 4^3 to get 8^3 ?			
	A. 64	B. 448	C. 48	D. 576
22.	By how much is 4^3 greater than 1^3 ?			
	A. 63	B. 15	C. 65	D. 27
23.	$p^3 - (-p)^3 =$			
	A. $2p$	B. 0	C. p^6	D. $2p^3$
24.	$2^3 \times (-5)^3 =$			
	A. 100	B. -117	C. -1000	D. -30
25.	$8^3 \div 2^3 =$			
	A. 64	B. 216	C. 4	D. 504

Key sheet

1. C	2. D	3. D	4. C	5. B
6. C	7. B	8. B	9. A	10. B
11. A	12. A	13. D	14. A	15. B
16. C	17. B	18. D	19. C	20. D
21. B	22. A	23. D	24. C	25. A

Solutions

1. 5^3 is the same as

5^3 means 5 multiplied by itself 3 times.

$$5^3 = 5 \times 5 \times 5 = 125$$

Ans: (C) $5 \times 5 \times 5$

2. $4 \times 4 \times 4 \times 5 \times 5 \times 5$ can be written as

Three 4's multiplied give 4^3 ; three 5's multiplied give 5^3 .

Ans: (D) $4^3 \times 5^3$

3. p^3 is read as

$p^3 = p \times p \times p$ is read as ' p power 3' (or) ' p cubed'.

Ans: (D) p cubed

4. $\square^3 = 216$. The number in the box is

$$6 \times 6 \times 6 = 216$$

So the box is 6.

Ans: (C) 6

5. The smallest cube greater than 150 is

From the table: $5^3 = 125$ and $6^3 = 216$

$125 < 150 < 216$, so the smallest cube above 150 is 216.

Ans: (B) 216

6. How many cubes of whole numbers lie between 100 and 600?

From the table of cubes, the cubes between 100 and 600 are 125, 216, 343, 512.

That is 4 cubes.

Ans: (C) 4

7. $8^3 =$

$$8^3 = 8 \times 8 \times 8 = 512$$

Ans: (B) 512

8. $40^3 =$

$$40 \times 40 = 1600$$

$$1600 \times 40 = 64000$$

Ans: (B) 64000

9. A cube-shaped stack has 12 small cubes along each edge. The number of small cubes in it is

$$\text{Number} = 12^3$$

$$12 \times 12 = 144, 144 \times 12 = 1728$$

Ans: (A) 1728

10. $15^3 = 225 \times \square$. The number in the box is

$$15^3 = 15 \times 15 \times 15 \text{ and } 15 \times 15 = 225$$

$$\therefore 15^3 = 225 \times 15$$

Ans: (B) 15

11. $(-7)^3 =$

$$(-7)^3 = (-7) \times (-7) \times (-7)$$

$$= 49 \times (-7) = -343$$

Ans: (A) -343

12. If k is a positive number, then $(-k)^3$ is

$(-k)^3 = -k^3$: a negative number multiplied 3 times gives a negative number.

Ans: (A) negative

13. $(-9)^3 = -\square$. The number in the box is

$$(-9)^3 = -9^3 = -729$$

So the box is 729.

Ans: (D) 729

14. $3^3 + 3^3 =$

$$3^3 + 3^3 = 27 + 27$$

$$= 54$$

Ans: (A) 54

15. $2^3 + 3^3 + 4^3 + 5^3 =$

$$2^3 + 3^3 + 4^3 + 5^3 = 8 + 27 + 64 + 125$$

$$= 224$$

Ans: (B) 224

16. Two big cubes are made of small cubes, with 1 and 7 small cubes along each edge. How many small cubes are there in the two cubes together?

$$\text{Total} = 1^3 + 7^3$$

$$1^3 + 7^3 = 1 + 343$$

$$= 344$$

Ans: (C) 344

17. $14^3 + (-14)^3 =$

$$(-14)^3 = -14^3$$

$$14^3 - 14^3 = 0$$

Ans: (B) 0

18. $(-1)^3 + 5^3 =$

$$\begin{aligned}(-1)^3 + 5^3 &= -1 + 125 \\ &= 124\end{aligned}$$

Ans: (D) 124

19. $(-2)^3 + 3^3 + (-1)^3 =$

$$\begin{aligned}(-2)^3 + 3^3 + (-1)^3 &= -8 + 27 + (-1) \\ &= -8 + 27 - 1 \\ &= 18\end{aligned}$$

Ans: (C) 18

20. $10^3 - 11^3 =$

$$\begin{aligned}11^3 &= 121 \times 11 = 1331 \\ 10^3 - 11^3 &= 1000 - 1331 \\ &= -331\end{aligned}$$

Ans: (D) -331

21. What must be added to 4^3 to get 8^3 ?

$$\begin{aligned}\text{Required number} &= 8^3 - 4^3 \\ 8^3 - 4^3 &= 512 - 64 \\ &= 448\end{aligned}$$

Ans: (B) 448

22. By how much is 4^3 greater than 1^3 ?

$$\begin{aligned}\text{Difference} &= 4^3 - 1^3 \\ 4^3 - 1^3 &= 64 - 1 \\ &= 63\end{aligned}$$

Ans: (A) 63

23. $p^3 - (-p)^3 =$

$$\begin{aligned}(-p)^3 &= -p^3 \\ p^3 - (-p^3) &= p^3 + p^3 = 2p^3\end{aligned}$$

Ans: (D) $2p^3$

24. $2^3 \times (-5)^3 =$

$$\begin{aligned}2^3 &= 8, (-5)^3 = -125 \\ 8 \times (-125) &= -1000\end{aligned}$$

Ans: (C) -1000

25. $8^3 \div 2^3 =$

$$\begin{aligned}8^3 &= 512, 2^3 = 8 \\ 512 \div 8 &= 64\end{aligned}$$

Ans: (A) 64
