

Cubes and Cube Roots

MCQ Test, Set 05

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. 4^3 is the same as

A. 4×3

B. $3 \times 3 \times 3 \times 3$

C. $4 \times 4 \times 4$

D. 4×4

2. $6 \times 6 \times 6 \times 10 \times 10 \times 10$ can be written as

A. 18×30

B. $6^3 \times 10^3$

C. 16^3

D. $6^2 \times 10^2$

3. $8 \times 8 \times 8$ in power form is

A. 8^3

B. 3^8

C. 8^2

D. 24

4. How many small cubes make a big cube that has 3 small cubes along each edge?

A. 36

B. 27

C. 9

D. 54

5. The largest cube less than 300 is

A. 200

B. 125

C. 216

D. 343

6. The smallest cube greater than 400 is

A. 450

B. 343

C. 729

D. 512

7. How many cubes of whole numbers lie between 50 and 1000?

A. 6

B. 5

C. 8

D. 7

8. $16^3 =$

A. 256

B. 3375

C. 4096

D. 48

9. To find 13^3 , Rani first works out $13 \times 13 = 169$. What should she do next?

A. 13×3

B. 169×169

C. 169×3

D. 169×13

10. $70^3 =$

A. 4900

B. 343000

C. 34300

D. 210

11. $(-5)^3 =$

A. -75

B. 25

C. -125

D. -15

12.	$(-11)^3 = -\square$. The number in the box is			
	A. 33	B. 1728	C. 121	D. 1331
13.	$(-20)^3 =$			
	A. 400	B. -60	C. -800	D. -8000
14.	$10^3 + 10^3 =$			
	A. 1000000	B. 1000	C. 2000	D. 8000
15.	$1^3 + 3^3 + 6^3 =$			
	A. 244	B. 1000	C. 30	D. 46
16.	$4^3 + 5^3 =$			
	A. 41	B. 27	C. 729	D. 189
17.	$3^3 + (-5)^3 =$			
	A. -16	B. 152	C. -98	D. -8
18.	$(-1)^3 + 4^3 =$			
	A. 27	B. 65	C. 15	D. 63
19.	$(-1)^3 + 4^3 + (-2)^3 =$			
	A. 55	B. 1	C. 71	D. 73
20.	$2^3 - 6^3 =$			
	A. -32	B. -208	C. -224	D. -64
21.	$7^3 - 2^3 =$			
	A. 125	B. 335	C. 45	D. 351
22.	One big cube has 10 small cubes along each edge and another has 4. How many more small cubes does the first one have?			
	A. 936	B. 84	C. 216	D. 1064
23.	$(-2)^3 - (-4)^3 =$			
	A. -72	B. 56	C. 12	D. 8
24.	$-3^3 - 6^3 =$			
	A. -243	B. 189	C. -45	D. -729
25.	$-12^3 - (-12)^3 =$			
	A. -2×12^3	B. 12^6	C. -12^3	D. 0

Key sheet

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

Solutions

1. 4^3 is the same as

4^3 means 4 multiplied by itself 3 times.

$$4^3 = 4 \times 4 \times 4 = 64$$

Ans: (C) $4 \times 4 \times 4$

2. $6 \times 6 \times 6 \times 10 \times 10 \times 10$ can be written as

Three 6's multiplied give 6^3 ; three 10's multiplied give 10^3 .

Ans: (B) $6^3 \times 10^3$

3. $8 \times 8 \times 8$ in power form is

8 is multiplied by itself 3 times.

$$\therefore 8 \times 8 \times 8 = 8^3$$

Ans: (A) 8^3

4. How many small cubes make a big cube that has 3 small cubes along each edge?

Each layer has 3×3 cubes and there are 3 layers.

$$\text{Number} = 3^3 = 27$$

Ans: (B) 27

5. The largest cube less than 300 is

From the table: $6^3 = 216$ and $7^3 = 343$

$216 < 300 < 343$, so the largest cube below 300 is 216.

Ans: (C) 216

6. The smallest cube greater than 400 is

From the table: $7^3 = 343$ and $8^3 = 512$

$343 < 400 < 512$, so the smallest cube above 400 is 512.

Ans: (D) 512

7. How many cubes of whole numbers lie between 50 and 1000?

From the table of cubes, the cubes between 50 and 1000 are 64, 125, 216, 343, 512, 729.

That is 6 cubes.

Ans: (A) 6

8. $16^3 =$

$$16 \times 16 = 256$$

$$256 \times 16 = 4096$$

Ans: (C) 4096

9. To find 13^3 , Rani first works out $13 \times 13 = 169$. What should she do next?

$13^3 = 13 \times 13 \times 13$, so the product 169 must be multiplied by 13 once more.

$$169 \times 13 = 2197$$

Ans: (D) 169×13

10. $70^3 =$

$$70 \times 70 = 4900$$

$$4900 \times 70 = 343000$$

Ans: (B) 343000

11. $(-5)^3 =$

$$(-5)^3 = (-5) \times (-5) \times (-5)$$

$$= 25 \times (-5) = -125$$

Ans: (C) -125

12. $(-11)^3 = -\square$. The number in the box is

$$(-11)^3 = -11^3 = -1331$$

So the box is 1331.

Ans: (D) 1331

13. $(-20)^3 =$

$$(-20) \times (-20) = 400$$

$$400 \times (-20) = -8000$$

Ans: (D) -8000

14. $10^3 + 10^3 =$

$$10^3 + 10^3 = 1000 + 1000$$

$$= 2000$$

Ans: (C) 2000

15. $1^3 + 3^3 + 6^3 =$

$$1^3 + 3^3 + 6^3 = 1 + 27 + 216$$

$$= 244$$

Ans: (A) 244

16. $4^3 + 5^3 =$

$$4^3 + 5^3 = 64 + 125$$

$$= 189$$

Ans: (D) 189

17. $3^3 + (-5)^3 =$

$$\begin{aligned} 3^3 + (-5)^3 &= 27 + (-125) \\ &= 27 - 125 \\ &= -98 \end{aligned}$$

Ans: (C) -98

18. $(-1)^3 + 4^3 =$

$$\begin{aligned} (-1)^3 + 4^3 &= -1 + 64 \\ &= 63 \end{aligned}$$

Ans: (D) 63

19. $(-1)^3 + 4^3 + (-2)^3 =$

$$\begin{aligned} (-1)^3 + 4^3 + (-2)^3 &= -1 + 64 + (-8) \\ &= -1 + 64 - 8 \\ &= 55 \end{aligned}$$

Ans: (A) 55

20. $2^3 - 6^3 =$

$$\begin{aligned} 2^3 - 6^3 &= 8 - 216 \\ &= -208 \end{aligned}$$

Ans: (B) -208

21. $7^3 - 2^3 =$

$$\begin{aligned} 7^3 - 2^3 &= 343 - 8 \\ &= 335 \end{aligned}$$

Ans: (B) 335

22. One big cube has 10 small cubes along each edge and another has 4. How many more small cubes does the first one have?

$$\begin{aligned} \text{More} &= 10^3 - 4^3 \\ 10^3 - 4^3 &= 1000 - 64 \\ &= 936 \end{aligned}$$

Ans: (A) 936

23. $(-2)^3 - (-4)^3 =$

$$\begin{aligned} (-2)^3 - (-4)^3 &= -8 - (-64) \\ &= -8 + 64 \\ &= 56 \end{aligned}$$

Ans: (B) 56

24. $-3^3 - 6^3 =$

$$\begin{aligned} -3^3 - 6^3 &= -27 - 216 \\ &= -243 \end{aligned}$$

Ans: (A) -243

25. $-12^3 - (-12)^3 =$

$$(-12)^3 = -12^3$$

$$-12^3 - (-12^3) = -12^3 + 12^3 = 0$$

Ans: (D) 0
