

Cubes and Cube Roots

MCQ Test, Set 08

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. | How is b^3 read? | A. b cubed | B. b squared | C. b plus 3 | D. 3 times b |
| 2. | $4 \times 4 \times 4 = 4^\square$. The number in the box is | A. 4 | B. 2 | C. 12 | D. 3 |
| 3. | $3 \times 3 \times 3 \times 7 \times 7 \times 7$ can be written as | A. $3^3 \times 7^3$ | B. $3^2 \times 7^2$ | C. 10^3 | D. 9×21 |
| 4. | How many cubes of whole numbers lie between 1 and 100? | A. 4 | B. 3 | C. 5 | D. 2 |
| 5. | $10^3 =$ | A. 30 | B. 100 | C. 1331 | D. 1000 |
| 6. | Which number below is a cube? | A. 48 | B. 16 | C. 80 | D. 64 |
| 7. | The next number in 8, 64, 216, 512, ... is | A. 100 | B. 1000 | C. 1728 | D. 808 |
| 8. | $80^3 =$ | A. 51200 | B. 240 | C. 6400 | D. 512000 |
| 9. | A big cube is built from small cubes, with 13 small cubes along each edge. How many small cubes does it have? | A. 1014 | B. 169 | C. 156 | D. 2197 |
| 10. | $18^3 = 324 \times \square$. The number in the box is | A. 324 | B. 18 | C. 3 | D. 2 |
| 11. | $(-q)^3 =$ | A. q^2 | B. $-q^3$ | C. $-3q^3$ | D. $-3q$ |

12. Which number, multiplied by itself 3 times, gives -1000 ?
A. -9 B. -100 C. -10 D. -11
-
13. $(-5)^3 = -\square$. The number in the box is
A. 216 B. 25 C. 15 D. 125
-
14. $2^3 + 4^3 + 6^3 =$
A. 72 B. 56 C. 288 D. 1728
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15. Two big cubes are made of small cubes, with 3 and 6 small cubes along each edge. How many small cubes are there in the two cubes together?
A. 243 B. 270 C. 729 D. 45
-
16. The sum of the cubes of 5 and 6 is
A. 341 B. 1331 C. 33 D. 61
-
17. $7^3 + (-2)^3 =$
A. 351 B. 45 C. 335 D. 125
-
18. $(-1)^3 + (-3)^3 =$
A. -10 B. -28 C. -64 D. 26
-
19. $(-5)^3 + 7^3 =$
A. 218 B. 468 C. 8 D. 24
-
20. $1^3 - 7^3 =$
A. -342 B. -216 C. -48 D. -344
-
21. $5^3 - 2^3 =$
A. 21 B. 133 C. 117 D. 27
-
22. What must be added to 2^3 to get 9^3 ?
A. 77 B. 737 C. 721 D. 343
-
23. $r^3 - (-r)^3 =$
A. $2r$ B. $2r^3$ C. 0 D. r^6
-
24. $(-6)^3 - (-4)^3 =$
A. -280 B. -152 C. -8 D. -20
-
25. $-2^3 - 3^3 =$
A. -125 B. -13 C. -35 D. 19
-

Key sheet

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

Solutions

1. How is b^3 read?

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

Ans: (A) b cubed

2. $4 \times 4 \times 4 = 4^{\square}$. The number in the box is

4 is multiplied by itself 3 times, so the power is 3.

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

Ans: (D) 3

3. $3 \times 3 \times 3 \times 7 \times 7 \times 7$ can be written as

Three 3's multiplied give 3^3 ; three 7's multiplied give 7^3 .

Ans: (A) $3^3 \times 7^3$

4. How many cubes of whole numbers lie between 1 and 100?

From the table of cubes, the cubes between 1 and 100 are 8, 27, 64.

That is 3 cubes.

Ans: (B) 3

5. $10^3 =$

$$10^3 = 10 \times 10 \times 10 = 1000$$

Ans: (D) 1000

6. Which number below is a cube?

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

The other numbers are not in the table of cubes.

Ans: (D) 64

7. The next number in 8, 64, 216, 512, ... is

These are $2^3, 4^3, 6^3, 8^3$.

Next is $10^3 = 1000$

Ans: (B) 1000

8. $80^3 =$

$$80 \times 80 = 6400$$

$$6400 \times 80 = 512000$$

Ans: (D) 512000

9. A big cube is built from small cubes, with 13 small cubes along each edge. How many small cubes does it have?

$$\text{Number} = 13^3$$

$$13 \times 13 = 169, 169 \times 13 = 2197$$

Ans: (D) 2197

10. $18^3 = 324 \times \square$. The number in the box is

$$18^3 = 18 \times 18 \times 18 \text{ and } 18 \times 18 = 324$$

$$\therefore 18^3 = 324 \times 18$$

Ans: (B) 18

11. $(-q)^3 =$

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

Ans: (B) $-q^3$

12. Which number, multiplied by itself 3 times, gives -1000 ?

$$(-10)^3 = -10^3 = -1000$$

Ans: (C) -10

13. $(-5)^3 = -\square$. The number in the box is

$$(-5)^3 = -5^3 = -125$$

So the box is 125.

Ans: (D) 125

14. $2^3 + 4^3 + 6^3 =$

$$2^3 + 4^3 + 6^3 = 8 + 64 + 216$$

$$= 288$$

Ans: (C) 288

15. Two big cubes are made of small cubes, with 3 and 6 small cubes along each edge. How many small cubes are there in the two cubes together?

$$\text{Total} = 3^3 + 6^3$$

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

$$= 243$$

Ans: (A) 243

16. The sum of the cubes of 5 and 6 is

$$5^3 + 6^3 = 125 + 216$$

$$= 341$$

Ans: (A) 341

17. $7^3 + (-2)^3 =$

$$7^3 + (-2)^3 = 343 + (-8)$$

$$= 343 - 8$$

$$= 335$$

Ans: (C) 335

18. $(-1)^3 + (-3)^3 =$
 $(-1)^3 + (-3)^3 = -1 + (-27)$
 $= -1 - 27$
 $= -28$

Ans: (B) -28

19. $(-5)^3 + 7^3 =$
 $(-5)^3 + 7^3 = -125 + 343$
 $= 218$

Ans: (A) 218

20. $1^3 - 7^3 =$
 $1^3 - 7^3 = 1 - 343$
 $= -342$

Ans: (A) -342

21. $5^3 - 2^3 =$
 $5^3 - 2^3 = 125 - 8$
 $= 117$

Ans: (C) 117

22. What must be added to 2^3 to get 9^3 ?
Required number $= 9^3 - 2^3$
 $9^3 - 2^3 = 729 - 8$
 $= 721$

Ans: (C) 721

23. $r^3 - (-r)^3 =$
 $(-r)^3 = -r^3$
 $r^3 - (-r^3) = r^3 + r^3 = 2r^3$

Ans: (B) $2r^3$

24. $(-6)^3 - (-4)^3 =$
 $(-6)^3 - (-4)^3 = -216 - (-64)$
 $= -216 + 64$
 $= -152$

Ans: (B) -152

25. $-2^3 - 3^3 =$
 $-2^3 - 3^3 = -8 - 27$
 $= -35$

Ans: (C) -35
