

Cubes and Cube Roots

MCQ Test, Set 01

Time: 30 minutes

Maximum marks: 25

Name: _____ Class: _____ Date: _____

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

- | | | | | | |
|-----|--|--------------------------|--------------------|------------------|--------------------------|
| 1. | $5 \times 5 \times 5$ in power form is | A. 5^3 | B. 3^5 | C. 5^2 | D. 15 |
| 2. | q^3 means | A. $q \times q \times q$ | B. $q \times q$ | C. $3 \times q$ | D. $3 \times q \times q$ |
| 3. | How is z^3 read? | A. z plus 3 | B. 3 times z | C. z cubed | D. z squared |
| 4. | Which number, when cubed, gives 512? | A. 9 | B. 64 | C. 7 | D. 8 |
| 5. | Which of these is the cube of a whole number? | A. 216 | B. 100 | C. 200 | D. 36 |
| 6. | The next number in 125, 216, 343, 512, ... is | A. 1000 | B. 729 | C. 81 | D. 681 |
| 7. | A big cube is made of small cubes, with 4 small cubes along each edge. How many small cubes are there? | A. 16 | B. 96 | C. 64 | D. 12 |
| 8. | $11^3 =$ | A. 121 | B. 1000 | C. 1331 | D. 33 |
| 9. | To find 14^3 , Rani first works out $14 \times 14 = 196$. What should she do next? | A. 196×196 | B. 196×14 | C. 14×3 | D. 196×3 |
| 10. | $30^3 =$ | A. 27000 | B. 900 | C. 90 | D. 2700 |
| 11. | $(-x)^3 =$ | A. x^2 | B. $-x^3$ | C. $-3x^3$ | D. $-3x$ |

12. The cube of a negative number is always
- A. zero
 - B. negative
 - C. sometimes positive, sometimes negative
 - D. positive

-
13. Which number, multiplied by itself 3 times, gives -729 ?

A. -10 B. -243 C. -81 D. -9

-
14. $2^3 + 3^3 =$

A. 15 B. 13 C. 125 D. 35

-
15. The sum of the cubes of 2 and 6 is

A. 224 B. 512 C. 24 D. 40

-
16. $1^3 + 2^3 + 3^3 + 4^3 =$

A. 36 B. 30 C. 100 D. 1000

-
17. $5^3 + (-2)^3 =$

A. 133 B. 27 C. 117 D. 21

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

A. -34 B. -512 C. 98 D. -152

-
19. $(-3)^3 + 6^3 =$

A. 243 B. 189 C. 9 D. 27

-
20. $3^3 - 7^3 =$

A. -316 B. -64 C. -40 D. -370

-
21. $9^3 - 4^3 =$

A. 125 B. 665 C. 65 D. 793

-
22. What must be added to 5^3 to get 7^3 ?

A. 468 B. 218 C. 24 D. 8

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

A. 0 B. 27 C. 216 D. 54

-
24. $-4^3 - 5^3 =$

A. -41 B. 61 C. -189 D. -729

-
25. $(-1)^3 \times (-6)^3 =$

A. 18 B. 36 C. -217 D. 216

Key sheet

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

Solutions

1. $5 \times 5 \times 5$ in power form is

5 is multiplied by itself 3 times.

$$\therefore 5 \times 5 \times 5 = 5^3$$

Ans: (A) 5^3

2. q^3 means

The power 3 means q is multiplied by itself 3 times.

$$q^3 = q \times q \times q$$

Ans: (A) $q \times q \times q$

3. How is z^3 read?

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

Ans: (C) z cubed

4. Which number, when cubed, gives 512?

$$8 \times 8 \times 8 = 512$$

So 512 is the cube of 8.

Ans: (D) 8

5. Which of these is the cube of a whole number?

$$216 = 6 \times 6 \times 6 = 6^3$$

The other numbers are not in the table of cubes.

Ans: (A) 216

6. The next number in 125, 216, 343, 512, ... is

These are $5^3, 6^3, 7^3, 8^3$.

Next is $9^3 = 729$

Ans: (B) 729

7. A big cube is made of small cubes, with 4 small cubes along each edge. How many small cubes are there?

Each layer has 4×4 cubes and there are 4 layers.

$$\text{Number} = 4^3 = 64$$

Ans: (C) 64

8. $11^3 =$

$$11 \times 11 = 121$$

$$121 \times 11 = 1331$$

Ans: (C) 1331

9. To find 14^3 , Rani first works out $14 \times 14 = 196$. What should she do next?

$14^3 = 14 \times 14 \times 14$, so the product 196 must be multiplied by 14 once more.

$$196 \times 14 = 2744$$

Ans: (B) 196×14

10. $30^3 =$

$$30 \times 30 = 900$$

$$900 \times 30 = 27000$$

Ans: (A) 27000

11. $(-x)^3 =$

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

Ans: (B) $-x^3$

12. The cube of a negative number is always

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

Ans: (B) negative

13. Which number, multiplied by itself 3 times, gives -729 ?

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

Ans: (D) -9

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

$$2^3 + 3^3 = 8 + 27$$

$$= 35$$

Ans: (D) 35

15. The sum of the cubes of 2 and 6 is

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

$$= 224$$

Ans: (A) 224

16. $1^3 + 2^3 + 3^3 + 4^3 =$

$$1^3 + 2^3 + 3^3 + 4^3 = 1 + 8 + 27 + 64$$

$$= 100$$

Ans: (C) 100

17. $5^3 + (-2)^3 =$

$$5^3 + (-2)^3 = 125 + (-8)$$

$$= 125 - 8$$

$$= 117$$

Ans: (C) 117

18. $(-3)^3 + (-5)^3 =$
 $(-3)^3 + (-5)^3 = -27 + (-125)$
 $= -27 - 125$
 $= -152$
Ans: (D) -152

19. $(-3)^3 + 6^3 =$
 $(-3)^3 + 6^3 = -27 + 216$
 $= 189$
Ans: (B) 189

20. $3^3 - 7^3 =$
 $3^3 - 7^3 = 27 - 343$
 $= -316$
Ans: (A) -316

21. $9^3 - 4^3 =$
 $9^3 - 4^3 = 729 - 64$
 $= 665$
Ans: (B) 665

22. What must be added to 5^3 to get 7^3 ?
Required number $= 7^3 - 5^3$
 $7^3 - 5^3 = 343 - 125$
 $= 218$
Ans: (B) 218

23. $3^3 - (-3)^3 =$
 $3^3 - (-3)^3 = 27 - (-27)$
 $= 27 + 27$
 $= 54$
Ans: (D) 54

24. $-4^3 - 5^3 =$
 $-4^3 - 5^3 = -64 - 125$
 $= -189$
Ans: (C) -189

25. $(-1)^3 \times (-6)^3 =$
 $(-1)^3 = -1, (-6)^3 = -216$
 $(-1) \times (-216) = 216$
Ans: (D) 216
