

Cubes and Cube Roots

MCQ Test, Set 07

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. $2 \times 2 \times 2 \times 9 \times 9 \times 9$ can be written as

- A. $2^2 \times 9^2$ B. 6×27 C. $2^3 \times 9^3$ D. 11^3

2. $4 \times 4 \times 4$ in power form is

- A. 4^3 B. 4^2 C. 3^4 D. 12

3. t^3 means

- A. $t \times t$ B. $t \times t \times t$ C. $3 \times t \times t$ D. $3 \times t$

4. $\square^3 = 64$. The number in the box is

- A. 3 B. 4 C. 16 D. 5

5. A carton has 7 layers. Each layer has 7 rows of 7 packets. How many packets are in the carton?

- A. 56 B. 21 C. 49 D. 343

6. The largest cube less than 900 is

- A. 1000 B. 512 C. 729 D. 800

7. The smallest cube greater than 50 is

- A. 64 B. 125 C. 100 D. 27

8. A cube-shaped stack has 15 small cubes along each edge. The number of small cubes in it is

- A. 1350 B. 3375 C. 225 D. 180

9. $12^3 = 144 \times \square$. The number in the box is

- A. 12 B. 2 C. 144 D. 3

10. To find 16^3 , Rani first works out $16 \times 16 = 256$. What should she do next?

- A. 256×3 B. 256×16 C. 16×3 D. 256×256

11. $(-m)^3 =$

- A. $-3m$ B. m^2 C. $-3m^3$ D. $-m^3$

12. Which number, multiplied by itself 3 times, gives -216 ?

A. -72

B. -7

C. -36

D. -6

13. $(-8)^3 = -\square$. The number in the box is

A. 24

B. 64

C. 512

D. 729

14. $5^3 + 5^3 =$

A. 15625

B. 250

C. 125

D. 1000

15. $1^3 + 5^3 =$

A. 216

B. 18

C. 26

D. 126

16. The sum of the cubes of 4 and 6 is

A. 280

B. 1000

C. 52

D. 30

17. $6^3 + (-1)^3 =$

A. 125

B. 35

C. 215

D. 217

18. $(-2)^3 + (-6)^3 =$

A. -224

B. -512

C. 208

D. -40

19. $(-1)^3 + 5^3 + (-3)^3 =$

A. 97

B. 1

C. 153

D. 151

20. $10^3 - 6^3 =$

A. 64

B. 1216

C. 784

D. 12

21. What must be added to 3^3 to get 6^3 ?

A. 243

B. 189

C. 27

D. 3

22. By how much is 5^3 greater than 3^3 ?

A. 152

B. 16

C. 98

D. 8

23. $(-1)^3 - (-4)^3 =$

A. 15

B. 63

C. 27

D. -65

24. $-1^3 - 8^3 =$

A. 511

B. -65

C. -729

D. -513

25. $(-2)^3 \times 3^3 =$

A. 19

B. -18

C. 36

D. -216

Key sheet

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

Solutions

1. $2 \times 2 \times 2 \times 9 \times 9 \times 9$ can be written as

Three 2's multiplied give 2^3 ; three 9's multiplied give 9^3 .

Ans: (C) $2^3 \times 9^3$

2. $4 \times 4 \times 4$ in power form is

4 is multiplied by itself 3 times.

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

Ans: (A) 4^3

3. t^3 means

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

$$t^3 = t \times t \times t$$

Ans: (B) $t \times t \times t$

4. $\square^3 = 64$. The number in the box is

$$4 \times 4 \times 4 = 64$$

So the box is 4.

Ans: (B) 4

5. A carton has 7 layers. Each layer has 7 rows of 7 packets. How many packets are in the carton?

$$\text{Number} = 7 \times 7 \times 7$$

$$= 7^3 = 343$$

Ans: (D) 343

6. The largest cube less than 900 is

$$\text{From the table: } 9^3 = 729 \text{ and } 10^3 = 1000$$

$$729 < 900 < 1000, \text{ so the largest cube below 900 is 729.}$$

Ans: (C) 729

7. The smallest cube greater than 50 is

$$\text{From the table: } 3^3 = 27 \text{ and } 4^3 = 64$$

$$27 < 50 < 64, \text{ so the smallest cube above 50 is 64.}$$

Ans: (A) 64

8. A cube-shaped stack has 15 small cubes along each edge. The number of small cubes in it is

$$\text{Number} = 15^3$$

$$15 \times 15 = 225, 225 \times 15 = 3375$$

Ans: (B) 3375

9. $12^3 = 144 \times \square$. The number in the box is

$$12^3 = 12 \times 12 \times 12 \text{ and } 12 \times 12 = 144$$

$$\therefore 12^3 = 144 \times 12$$

Ans: (A) 12

10. To find 16^3 , Rani first works out $16 \times 16 = 256$. What should she do next?

$16^3 = 16 \times 16 \times 16$, so the product 256 must be multiplied by 16 once more.

$$256 \times 16 = 4096$$

Ans: (B) 256×16

11. $(-m)^3 =$

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

Ans: (D) $-m^3$

12. Which number, multiplied by itself 3 times, gives -216 ?

$$(-6)^3 = -6^3 = -216$$

Ans: (D) -6

13. $(-8)^3 = -\square$. The number in the box is

$$(-8)^3 = -8^3 = -512$$

So the box is 512.

Ans: (C) 512

14. $5^3 + 5^3 =$

$$5^3 + 5^3 = 125 + 125$$

$$= 250$$

Ans: (B) 250

15. $1^3 + 5^3 =$

$$1^3 + 5^3 = 1 + 125$$

$$= 126$$

Ans: (D) 126

16. The sum of the cubes of 4 and 6 is

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

$$= 280$$

Ans: (A) 280

17. $6^3 + (-1)^3 =$

$$6^3 + (-1)^3 = 216 + (-1)$$

$$= 216 - 1$$

$$= 215$$

Ans: (C) 215

18. $(-2)^3 + (-6)^3 =$
 $(-2)^3 + (-6)^3 = -8 + (-216)$
 $= -8 - 216$
 $= -224$

Ans: (A) -224

19. $(-1)^3 + 5^3 + (-3)^3 =$
 $(-1)^3 + 5^3 + (-3)^3 = -1 + 125 + (-27)$
 $= -1 + 125 - 27$
 $= 97$

Ans: (A) 97

20. $10^3 - 6^3 =$
 $10^3 - 6^3 = 1000 - 216$
 $= 784$

Ans: (C) 784

21. What must be added to 3^3 to get 6^3 ?
Required number $= 6^3 - 3^3$
 $6^3 - 3^3 = 216 - 27$
 $= 189$

Ans: (B) 189

22. By how much is 5^3 greater than 3^3 ?
Difference $= 5^3 - 3^3$
 $5^3 - 3^3 = 125 - 27$
 $= 98$

Ans: (C) 98

23. $(-1)^3 - (-4)^3 =$
 $(-1)^3 - (-4)^3 = -1 - (-64)$
 $= -1 + 64$
 $= 63$

Ans: (B) 63

24. $-1^3 - 8^3 =$
 $-1^3 - 8^3 = -1 - 512$
 $= -513$

Ans: (D) -513

25. $(-2)^3 \times 3^3 =$
 $(-2)^3 = -8, 3^3 = 27$
 $(-8) \times 27 = -216$

Ans: (D) -216
