

Cubes and Cube Roots

MCQ Test, Set 10

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. $9 \times 9 \times 9 = 9^{\square}$. The number in the box is

- A.** 3 **B.** 27 **C.** 9 **D.** 2

2. $x \times x \times x \times y \times y \times y$ in power form is

- A.** $x^3 \times y^3$ **B.** $3x \times 3y$ **C.** $(x \times y)^6$ **D.** $x^2 \times y^2$

3. c^3 means

- A.** $3 \times c$ **B.** $c \times c \times c$ **C.** $3 \times c \times c$ **D.** $c \times c$

4. How many cubes of whole numbers lie between 200 and 800?

- A.** 5 **B.** 6 **C.** 4 **D.** 3

5. Which of these can be written as k^3 for a whole number k ?

- A.** 81 **B.** 900 **C.** 729 **D.** 300

6. The next number in 64, 125, 216, 343, ... is

- A.** 64 **B.** 470 **C.** 729 **D.** 512

7. How many small cubes make a big cube that has 7 small cubes along each edge?

- A.** 343 **B.** 294 **C.** 49 **D.** 21

8. $21^3 =$

- A.** 63 **B.** 9261 **C.** 441 **D.** 8000

9. To find 12^3 , Rani first works out $12 \times 12 = 144$. What should she do next?

- A.** 144×3 **B.** 12×3 **C.** 144×12 **D.** 144×144

10. $16^3 = 256 \times \square$. The number in the box is

- A.** 256 **B.** 16 **C.** 2 **D.** 3

11. $(-16) \times (-16) \times (-16) =$

- A.** 256 **B.** -48 **C.** -768 **D.** -4096

12. $(-t)^3 =$
A. $-3t$ **B.** $-t^3$ **C.** t^2 **D.** $-3t^3$
-
13. $(-4)^3 = -\square$. The number in the box is
A. 125 **B.** 12 **C.** 16 **D.** 64
-
14. $10^3 + 1^3 =$
A. 101 **B.** 1001 **C.** 33 **D.** 1331
-
15. $1^3 + 2^3 + 5^3 =$
A. 24 **B.** 30 **C.** 134 **D.** 512
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16. The sum of the cubes of 3 and 9 is
A. 36 **B.** 90 **C.** 1728 **D.** 756
-
17. $(-3)^3 + 8^3 =$
A. 55 **B.** 539 **C.** 485 **D.** 125
-
18. $(-2)^3 + (-7)^3 =$
A. -53 **B.** -729 **C.** 335 **D.** -351
-
19. $4^3 + (-2)^3 =$
A. 12 **B.** 8 **C.** 72 **D.** 56
-
20. What must be added to 6^3 to get 7^3 ?
A. 127 **B.** 559 **C.** 13 **D.** 1
-
21. By how much is 10^3 greater than 5^3 ?
A. 1125 **B.** 125 **C.** 875 **D.** 75
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22. Ravi says $5^3 - 9^3 = 604$. The correct value is
A. -604 **B.** -854 **C.** -56 **D.** -64
-
23. $-2^3 - 6^3 =$
A. -40 **B.** -224 **C.** 208 **D.** -512
-
24. $2^3 \times (-3)^3 =$
A. 36 **B.** -216 **C.** -18 **D.** -19
-
25. $15^3 \div 5^3 =$
A. 27 **B.** 3250 **C.** 3 **D.** 1000
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Key sheet

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

Solutions

1. $9 \times 9 \times 9 = 9^{\square}$. The number in the box is

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

$$9 \times 9 \times 9 = 9^3$$

Ans: (A) 3

2. $x \times x \times x \times y \times y \times y$ in power form is

$$x \times x \times x = x^3 \text{ and } y \times y \times y = y^3$$

So it is $x^3 \times y^3$.

Ans: (A) $x^3 \times y^3$

3. c^3 means

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

$$c^3 = c \times c \times c$$

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

4. How many cubes of whole numbers lie between 200 and 800?

From the table of cubes, the cubes between 200 and 800 are 216, 343, 512, 729.

That is 4 cubes.

Ans: (C) 4

5. Which of these can be written as k^3 for a whole number k ?

$$729 = 9 \times 9 \times 9 = 9^3$$

The other numbers are not in the table of cubes.

Ans: (C) 729

6. The next number in 64, 125, 216, 343, ... is

These are $4^3, 5^3, 6^3, 7^3$.

Next is $8^3 = 512$

Ans: (D) 512

7. How many small cubes make a big cube that has 7 small cubes along each edge?

Each layer has 7×7 cubes and there are 7 layers.

$$\text{Number} = 7^3 = 343$$

Ans: (A) 343

8. $21^3 =$

$$21 \times 21 = 441$$

$$441 \times 21 = 9261$$

Ans: (B) 9261

9. To find 12^3 , Rani first works out $12 \times 12 = 144$. What should she do next?

$12^3 = 12 \times 12 \times 12$, so the product 144 must be multiplied by 12 once more.

$$144 \times 12 = 1728$$

Ans: (C) 144×12

10. $16^3 = 256 \times \square$. The number in the box is

$$16^3 = 16 \times 16 \times 16 \text{ and } 16 \times 16 = 256$$

$$\therefore 16^3 = 256 \times 16$$

Ans: (B) 16

11. $(-16) \times (-16) \times (-16) =$

$$(-16) \times (-16) = 256$$

$$256 \times (-16) = -4096$$

Ans: (D) -4096

12. $(-t)^3 =$

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

Ans: (B) $-t^3$

13. $(-4)^3 = -\square$. The number in the box is

$$(-4)^3 = -4^3 = -64$$

So the box is 64.

Ans: (D) 64

14. $10^3 + 1^3 =$

$$10^3 + 1^3 = 1000 + 1$$

$$= 1001$$

Ans: (B) 1001

15. $1^3 + 2^3 + 5^3 =$

$$1^3 + 2^3 + 5^3 = 1 + 8 + 125$$

$$= 134$$

Ans: (C) 134

16. The sum of the cubes of 3 and 9 is

$$3^3 + 9^3 = 27 + 729$$

$$= 756$$

Ans: (D) 756

17. $(-3)^3 + 8^3 =$

$$(-3)^3 + 8^3 = -27 + 512$$

$$= 485$$

Ans: (C) 485

18. $(-2)^3 + (-7)^3 =$
 $(-2)^3 + (-7)^3 = -8 + (-343)$
 $= -8 - 343$
 $= -351$

Ans: (D) -351

19. $4^3 + (-2)^3 =$
 $4^3 + (-2)^3 = 64 + (-8)$
 $= 64 - 8$
 $= 56$

Ans: (D) 56

20. What must be added to 6^3 to get 7^3 ?

Required number $= 7^3 - 6^3$
 $7^3 - 6^3 = 343 - 216$
 $= 127$

Ans: (A) 127

21. By how much is 10^3 greater than 5^3 ?

Difference $= 10^3 - 5^3$
 $10^3 - 5^3 = 1000 - 125$
 $= 875$

Ans: (C) 875

22. Ravi says $5^3 - 9^3 = 604$. The correct value is

$5^3 - 9^3 = 125 - 729$
 $= -604$

Ravi took the smaller cube from the bigger one.

Ans: (A) -604

23. $-2^3 - 6^3 =$
 $-2^3 - 6^3 = -8 - 216$
 $= -224$

Ans: (B) -224

24. $2^3 \times (-3)^3 =$
 $2^3 = 8, (-3)^3 = -27$
 $8 \times (-27) = -216$

Ans: (B) -216

25. $15^3 \div 5^3 =$
 $15^3 = 3375, 5^3 = 125$
 $3375 \div 125 = 27$

Ans: (A) 27
