



Second
Semester
2024/2025

Powers,
Exponents,
and Roots

Unit 1

Class
PREP 1

Subject
MATH



Question 1

Choose the correct answer from the following options:

1. Which of the following equals $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$?

(a) 3×7

(b) 7^3

(c) 3^7

(d) $3 + 7$

2. Which of the following equals $(-2)^3$?

(a) -6

(b) 6

(c) 8

(d) -8

Which of the following equals 3^4 ?

(a) -12

(b) -7

(c) 81

(d) -81

4. Which of the following equals 2^{-4} ?

(a) -16

(b) 16

(c) $1/8$

(d) $1/16$

5. Which of the following equals $a^{-1} \times a^3$?

(a) a^2

(b) a^4

(c) $1/a^2$

(d) $1/a^3$

6. If $2^4 \times a = 2^{20}$, what is the value of a?

(a) 2^{24}

(b) 2^{16}

(c) 2^5

(d) 2

7. Which of the following equals $(2^3)^2$?

(a) 2^6

(b) 2^5

(c) 2^{12}

(d) 6^2

8. Which of the following equals $(5^2)^0$?

(a) 0

(b) 1

(c) 25

(d) 5





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9. Which of the following equals 10^{-2} ?

- (a) 100 (b) $1/100$ (c) -100 (d) $-1/100$

10. Which of the following is the correct scientific notation for 450,000?

- (a) 4.5×10^5 (b) 45×10^4 (c) 0.45×10^6 (d) 4.5×10^4

11. Which of the following numbers is not in scientific notation?

- (a) 2.35×10^7 (b) 23.5×10^6 (c) 2.35×10^{-7} (d) 3.5×10^{-6}

12. Which of the following is the correct scientific notation for 0.00056?

- (a) 5.6×10^4 (b) 5.6×10^{-4} (c) 5.6×10^{-5} (d) 0.56×10^{-3}

13. What is $3 \times 10^4 \times 2 \times 10^3$ in scientific notation?

- (a) 6×10^7 (b) 6×10^6 (c) 6×10^1 (d) 6×10^5

14. Which of the following equals $(2 \times 10^6) \div (4 \times 10^2)$?

- (a) 0.5×10^4 (b) 5×10^2 (c) 0.5×10^5 (d) 5×10^4

15. If $2^{-5} \times a = 1$, what is the value of a?

- (a) 5^2 (b) 2^5 (c) 2^{-5} (d) 5^{-2}

16. Which of the following is the additive inverse of the number 4^{-3} ?

- (a) $(-4)^3$ (b) $(-4)^{-3}$ (c) 4^3 (d) 4^{-3}

17. Which of the following expresses y^{-2} / y^{-6} in its simplest form?

- (a) y^4 (b) $1/y^4$ (c) y^8 (d) $1/y^8$





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18. Which of the following is the square root of 144?
(a) 12 (b) -12 (c) ± 12 (d) 14
19. Which of the following is the cube root of 64?
(a) 4 (b) -4 (c) ± 4 (d) 16
20. Which of the following equals $\sqrt{81}$?
(a) 9 (b) -9 (c) ± 9 (d) 8
21. Which of the following equals $\sqrt[3]{-27}$?
(a) 3 (b) -3 (c) ± 3 (d) 9
22. Which of the following represents $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 5$ in exponential form?
(a) $2^3 \times 3^2 \times 5^2$ (b) $2^4 \times 3^2 \times 5^2$
(c) $2^4 \times 3^3 \times 5^2$ (d) $2^2 \times 3^2 \times 5^2$
23. What is the standard form of 15305.7?
(a) 1.53057×10^3 (b) 1.53057×10^4
(c) 1.53057×10^5 (d) 1.53057×10^6
24. What is the value of 10^3 ?
(a) 100 (b) 1000 (c) 10 (d) 10000
25. What is the decimal number for $6 \times 10^4 + 7 \times 10^3 + 1 \times 10^2 + 3 \times 10^0$?
(a) 67103 (b) 76103
(c) 67013 (d) 76130





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26. Simplify $(3^7 \div 3^5)^4$ and express in exponential form.

- (a) 3^7 (b) 3^9 (c) 3^8 (d) 3^{10}

27. What is the value of $(3^0 - 2^0) \times (3^0 + 2^0)$?

- (a) 2 (b) 0 (c) 1 (d) 3

28. Which of the following simplifies $(5^2)^4 \times 2^8 \div (5^5 \times (2^3)^2)$ correctly?

- (a) 500 (b) 600 (c) 400 (d) 700

29. Express 121×243 as a product of prime powers.

- (a) $11^2 \times 3^5$ (b) $11^3 \times 3^5$
(c) $11^2 \times 3^6$ (d) $11^3 \times 3^4$

30. What is the value of $2^4 \times (-3)^2 \times 5^2$?

- (a) 3200 (b) 3600 (c) 4000 (d) 2800

31. Simplify $15^4 \times 18^3 \div 3^4 \times 5^3 \times 12$ using exponent laws.

- (a) 2430 (b) 2700 (c) 3000 (d) 2200

32. Simplify $((7^2)^5 \times 7^6) \div 7^3 \div (7^2 \div 7^0) \times 7^4$ and express in exponential form.

- (a) 7^5 (b) 7^6 (c) 7^7 (d) 7^8

33. Simplify $6^4 \times 9^2 \times 25^3 \div 3^2 \times 4^2 \times 15^6$ using exponent laws.

- (a) 0 (b) 1 (c) 2 (d) 5

22. What is the value of $8^3 \times 8^4$?

- (a) 8^{12} (b) 8^7 (c) 64^7 (d) None of these





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23. Which of the following is not equal to $3 \times 3 \times 3 \times 3 \times 3 \times 3$?

- (a) 3^6 (b) 18 (c) 9^3 (d) 729

24. What is the value of $[(4^2)]^3$?

- (a) 4^8 (b) 4^6 (c) 4^5 (d) 4^{23}

25. What is the decimal representation of 2.7×10^{-3} ?

- (a) 0.000027 (b) 0.00027
(c) 0.0027 (d) 2.007

26. What is the result of $a^m \times a^n$?

- (a) a^{mn} (b) a^{m+n} (c) a^{m-n} (d) $a^{m/n}$

27. What is the value of $(-1)^{1001}$?

- (a) 1 (b) -1 (c) 1001 (d) 0

28. What is the equivalent of 6^{-1} ?

- (a) 6 (b) $1/6$ (c) -6 (d) $-1/6$





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- (a) 4** (b) -4 (c) ± 4 (d) 16

7. Which of the following equals $\sqrt{81}$?

- (a) 9 (b) -9 **(c) ± 9** (d) 8

8. Which of the following equals $\sqrt[3]{-27}$?

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