

MATHEMATICS
Question bank - Integers
GRADE 9

Multiple Choice Questions

1. What is the value of $-5 + 7$?
a) -2 b) 2 c) 12 d) -12
2. The additive inverse of -8 is:
a) 8 b) -8 c) 0 d) 1
3. If the temperature drops from 3°C to -4°C , what is the change in temperature?
a) 7°C b) -7°C c) 1°C d) -1°C
4. What is $(-6) \times (-3)$?
a) 18 b) -18 c) 9 d) -9
5. Which integer lies between -4 and -2 ?
a) -5 b) -3 c) 0 d) 2
6. The value of $10 - (-3)$ is:
a) 7 b) 13 c) -7 d) -13
7. What is $-15 \div 5$?
a) 3 b) -3 c) 5 d) -5
8. If $a = -4$, what is $a + 6$?
a) 2 b) -2 c) 10 d) -10
9. The product of two negative integers is:
a) Negative b) Positive c) Zero d) Cannot say
10. What is the absolute value of -9 ?
a) 9 b) -9 c) 0 d) 1
11. Simplify: $(-7) + (-3) - 4$.
a) -14 b) 14 c) -10 d) 10
12. What is $(-12) \times 4$? (3 marks)
a) 48 b) -48 c) 36 d) -36
13. If $x = -5$, evaluate $x - (-8)$.
a. 3 b) -3 c) 13 d) -13
14. A submarine is at -200 m. It rises by 50 m. What is its new position?
a. -250 m b) -150 m c) 150 m d) 250 m

15. What is $(-20) \div (-4)$?
a. 5 b) -5 c) 4 d) -4
16. Simplify: $8 - 12 + (-5)$.
a. 1 b) -9 c) 9 d) -1
17. Which is greater: -7×2 or -3×5 ?
a. -7×2 b) -3×5 c) Equal d) Cannot compare
18. The value of $(-2)^3$ is:
a. 8 b) -8 c) 6 d) -6
19. If the sum of two integers is -10 and one of them is -4, what is the other?
a. 6 b) -6 c) 14 d) -14
20. What is $|-12| - |-5|$?
a. 7 b) -7 c) 17 d) -17

Part B: Short Answer Questions

1. Add: $-15 + 7 + (-3)$. Show your steps. (5 marks)
2. Multiply: $(-9) \times (-6) \times 2$. Show your steps. (5 marks)
3. A shopkeeper had a loss of \$-25 on Monday and a profit of \$10 on Tuesday. What is the net gain or loss? (5 marks)
4. Divide: $(-72) \div (-9)$. Show your steps. (5 marks)
5. Simplify: $14 - (-6) + (-8) - 5$. Show your steps. (5 marks)
6. The temperature was -5°C in the morning and dropped by 3°C by noon. What is the new temperature? (5 marks)
7. Compare: $(-4) \times (-5)$ and $6 \times (-3)$ using a number line or calculations. (5 marks)
8. If $x = -7$ and $y = 4$, evaluate $x^2 - y$. Show your steps. (5 marks)
9. A diver is at -30 m. He ascends 10 m, then descends 15 m. What is his final depth? (5 marks)
10. Find three consecutive integers whose sum is -12. Show your steps. (5 marks)

Part C: Case-Based Questions

1. Temperature Changes:

In a city, the temperature on Monday was -8°C . On Tuesday, it increased by 5°C , and on Wednesday, it decreased by 7°C .

- a) What was the temperature on Tuesday?
- b) What was the temperature on Wednesday?
- c) What is the total change in temperature from Monday to Wednesday?

2. Elevator Movement:

An elevator starts at the ground floor (0 m). It goes down to -15 m, then up to -5 m, and finally down to -20 m.

- What is the total distance traveled by the elevator?
- What is the net displacement from the starting point?
- If each meter takes 2 seconds, how long did the journey take?

Solutions

Part A: MCQs

- b) 2 ($-5 + 7 = 2$)
- a) 8 (Additive inverse of -8 is 8)
- b) -7°C ($3 - (-4) = 3 + 4 = -7$)
- a) 18 ($-6 \times -3 = 18$)
- b) -3 (-3 is between -4 and -2)
- b) 13 ($10 - (-3) = 10 + 3 = 13$)
- b) -3 ($-15 \div 5 = -3$)
- a) 2 ($-4 + 6 = 2$)
- b) Positive (Negative \times Negative = Positive)
- a) 9 ($|-9| = 9$)
- a) -14 ($-7 + (-3) - 4 = -7 - 3 - 4 = -14$)
- b) -48 ($-12 \times 4 = -48$)
- a) 3 ($-5 - (-8) = -5 + 8 = 3$)
- b) -150 m ($-200 + 50 = -150$)
- a) 5 ($-20 \div -4 = 5$)
- b) -9 ($8 - 12 + (-5) = 8 - 12 - 5 = -9$)
- b) -3×5 ($-7 \times 2 = -14$, $-3 \times 5 = -15$, $-14 > -15$)
- b) -8 ($(-2)^3 = -2 \times -2 \times -2 = -8$)
- b) -6 ($-4 + x = -10$, $x = -10 + 4 = -6$)
- a) 7 ($|-12| - |-5| = 12 - 5 = 7$)

Part B: Short Answer Questions

- $-15 + 7 = -8$, $-8 + (-3) = -11$. Answer: -11 .

2. $(-9) \times (-6) = 54$, $54 \times 2 = 108$. Answer: 108.
3. $-25 + 10 = -15$. Answer: Net loss of Rs 15. $-72 \div -9 = 8$. Answer: 8.
4. $14 - (-6) = 14 + 6 = 20$, $20 + (-8) = 12$, $12 - 5 = 7$. Answer: 7.
5. $-5 - 3 = -8$. Answer: -8°C .
6. $(-4) \times (-5) = 20$, $6 \times (-3) = -18$. Since $20 > -18$, $(-4) \times (-5)$ is greater.
7. $x^2 = (-7)^2 = 49$, $49 - 4 = 45$. Answer: 45.
8. $-30 + 10 = -20$, $-20 - 15 = -35$. Answer: -35 m .
9. Let integers be x , $x + 1$, $x + 2$. Then $x + (x + 1) + (x + 2) = -12$, $3x + 3 = -12$, $3x = -15$, $x = -5$. Integers: -5 , -4 , -3 .

Part C: Case-Based Questions

1. Temperature Changes:

- a) $-8 + 5 = -3$. Answer: -3°C .
- b) $-3 - 7 = -10$. Answer: -10°C .
- c) Total change: $-10 - (-8) = -10 + 8 = -2^{\circ}\text{C}$.

2. Elevator Movement:

- a) Distance: $|-15 - 0| + |-5 - (-15)| + |-20 - (-5)| = 15 + 10 + 15 = 40\text{ m}$.
- b) Net displacement: $-20 - 0 = -20\text{ m}$.
- c) Time: $40 \times 2 = 80$ seconds.