MATHEMATICS

Chapter 1: Integers

Important Questions

Multiple Choice Questions :

Question 1. −67 × (−1) = ?

(a) -1

(b) -67

(c) 67

(d) 1

Question 2. Find 4 x (- 8)

(a) – 32

(b) 32

(c) None of these

Question 3. With respect to which of the following operations is closure property satisfied by the set of integers?

(a) +,×

(b) +,÷,×

(c) +,×,−

(d) +,−,÷

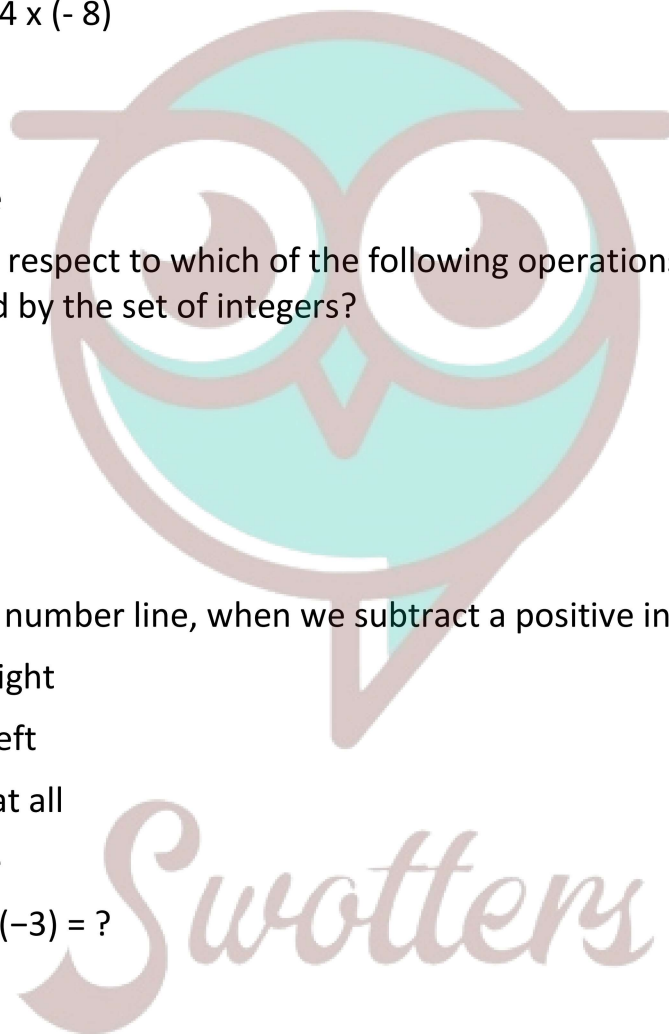Question 4. On a number line, when we subtract a positive integer, we

(a) move to the right

(b) move to the left

(c) do not move at all

(d) none of these

Question 5. 10 × (−3) = ?

(a) 7

(b) 30

(c) -30

(d) None of these

Question 6. What is the absolute value of |-239|?

(a) 0

(b) 239

(c) -239

(d) 1

Question 7. Additive inverse of 10 is :

(a) 0

(b) 10

(c) -10

(d) None of these

Question 8. What will be the sign of the product if we multiply together 8 negative integers ?

(a) Negative

(b) Positive

(c) None of these

Question 9. 2 × 4 = ?

(a) 8

(b) -8

(c) 3

(d) 6

Question 10. Find 0 x 7

(a) 7

(b) 0

(c) None of these

Question 11. 6 × (−15 + 10) = _____
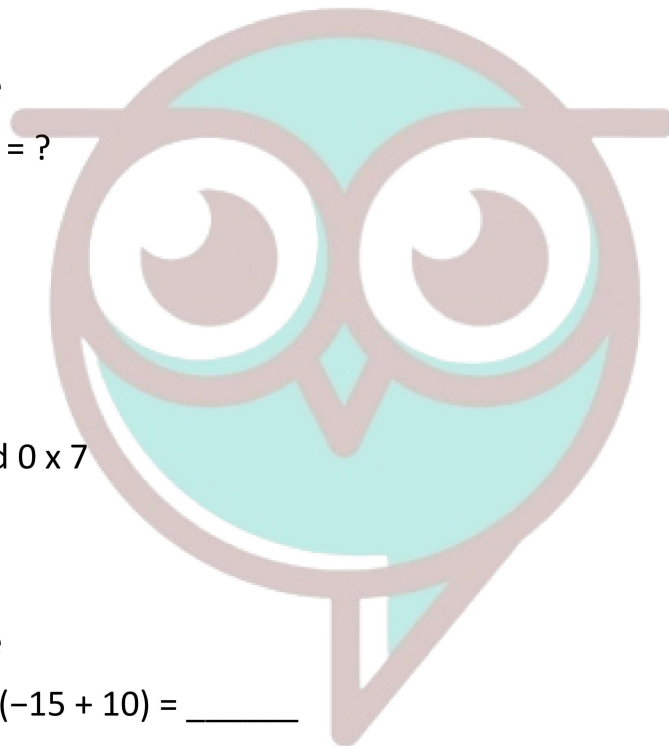
(a) 30

(b) -21

(c) -30

(d) 21

Question 12. If a, b, c are 3 integers then, a + (b + c)=

(a) a + b + c

(b) (a + b) + c

(c) (a + c) + b

(d) None of these

Question 13. Where are the negative numbers located on a horizontal number line?

(a) On the right of 0

(b) On the left of 0

(c) Above 0

(d) Below 0

Question 14. What is the value of 124 × 4−3 + 118 ÷ 2?

(a) 552

(b) 496

(c) 553

(d) −553

Question 15. Evaluate of − 50 ÷ 5

(a) -10

(b) 10

(c) None of these

Fill in the blanks :

Fill in the blanks using < or >.

(a) -3 …… -4

(b) 6 ……. -20

(c) -8 …… -2

(d) 5 …… -7

Very Short Questions :

1. Solve the following:

    (-8) × (-5) + (-6)

2. Solve the following:

    [(-6) × (-3)] + (-4)

3. Solve the following:

    (-10) × [(-13) + (-10)]

4. Solve the following:

    (-5) × [(-6) + 5]

5. Starting from (-7) × 4, find (-7) × (-3)

6. Using number line, find:

    (i) 3 × (-5)

7. Using number line, find:

    (i) 8 × (-2)

8. Write five pair of integers (m, n) such that m ÷ n = -3. One of such pair is
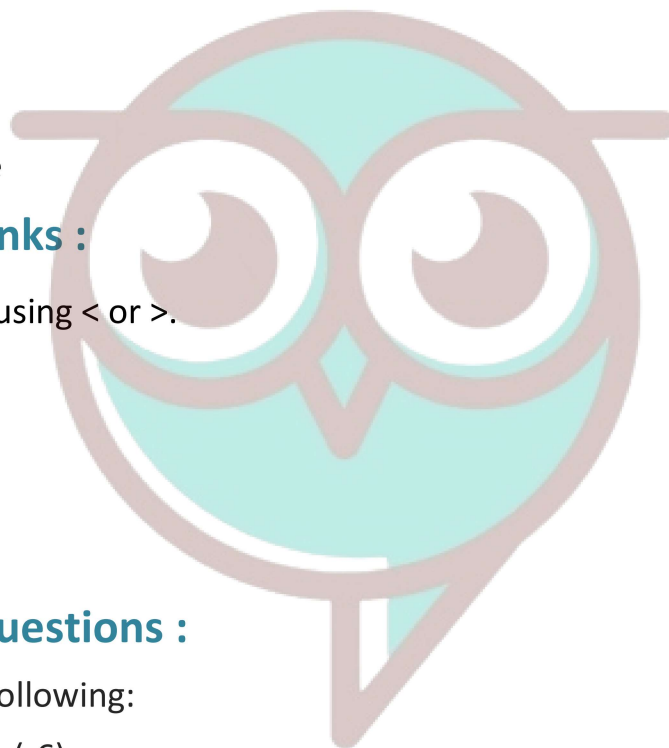
(-6, 2).

Short Questions :

1. Solve the following:

(-15) × 8 + (-15) × 4

2. Solve the following:

[32 + 2 × 17 + (-6)] ÷ 15

3. The sum of two integers is 116. If one of them is -79, find the other integers.

4. If a = -35, b = 10 cm and c = -5, verify that:

(i) a + (b + c) = (a + b) + c

(ii) a × (b + c) = a × b + a × c

5. Write down a pair of integers whose

(i) sum is -5

(ii) difference is -7

(iii) difference is -1

(iv) sum is 0

Long Questions :

1. You have ₹ 500 in your saving account at the beginning of the month. The record below shows all of your transactions during the month. How much money is in your account after these transactions?

Cheque No.	Date	Transactions description	Payment	Deposit
384102	4/9	Jal Board	₹ 120	₹ 200
275146	12/9	Deposit		
384103	22/9	LIC India	₹ 240	₹ 150
801351	29/9	Deposit		

2. The given table shows the freezing points in °F of different gases at sea level. Convert each of these into °C to the nearest integral value using the relations and complete the table

$$C = \frac{5}{9}[F - 32]$$

Gas	Freezing point at sea level (°F)	Freezing point at sea level (°C)
Hydrogen	−435	
Krypton	−251	
Oxygen	−369	

3. Taking today as zero on the number line, if the day before yesterday is 17 January, what is the date on 3 days after tomorrow?

Assertion and Reason Questions:

1) Assertion: The integers on the number line forms an infinite sequence.

Reason: A list of numbers following a definite rule which goes on forever is called an infinite sequence.

a.) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion

b.) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

c.) assertion is true but the reason is false.

d.) both assertion and reason are false.

2) Assertion: Every integer is a rational number.

Reason: An integer is a number with no decimal or fractional part, from the set of negative and positive numbers, including zero.

a.) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion

b.) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

c.) assertion is true but the reason is false.

d.) both assertion and reason are false.

ANSWER KEY -

Multiple Choice questions :

1. (c) 67

2. (a) – 32

   Product of 2 numbers of opposite signs is negative.

3. (c) +,×,−

4. (b) move to the left

5. (c) -30

6. (b) 239

7. (c) -10

If a is an integer then (- a) is its additive inverse.

8. (b) Positive

Since 8 is even so the product of 8 negative integers is positive.

9. (a) 8

10. (b) 0

Zero multiplied by any integer is zero.

11. (c) -30

12. (b) (a + b) + c

The addition of integer is associative.

13. (b) On the left of 0

14. (a) 552

15. (a) -10

Fill in the blanks :

(a) -3 $\geq$ -4

(b) 6 $\geq$ -20

(c) -8 $\leq$ -2

(d) 5 $\geq$ -7

Very Short Answer :

1. (-8) × (-5) + (-6)

= (-) × (-) × [8 × 5] + (-6)

= 40 – 6

= 34

2. [(-6) × (-3)] + (-4)

= (-) × (-) × [6 × 3] + (-4)

= 18 – 4

= 14

3. (-10) × [(-13) + (-10)]

= (-10) × (-23)

= (-) × (-) × [10 × 23]

= 230

4. (-5) × [(-6) + 5]

= (-5) × (-1)

= (-) × (-) × 5 × 1

= 5

5. (-7) × 4 = -28

(-7) × 3 = -21 = [-28 + 7]

(-7) × 2 − -14 = [-21 + 7]

(-7) × 1 = -7 = [-14 + 7]

(-7) × 0 = 0 = [-7 + 7]

(-7) × (-1) = 7 = [0 + 7]

(-7) × (-2) = 14 = [7 + 7]

(-7) × (-3) = 21 = [14 + 7]

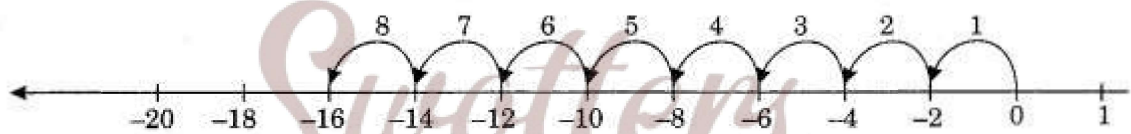**6.** (i) 3 × (-5)

From the number line, we have

(-5) + (-5) + (-5) = 3 × (-5) = -15

7. (i) 8 × (-2)

From the number line, we have

(-2) + (-2) + (-2) + (-2) + (-2) + (-2) + (-2) + (-2) = 8 × (-2) = -1

8. (i) (-3, 1) = (-3) ÷ 1 = -3

(ii) (9, -3) = 9 ÷ (-3) = -3

(iii) (6, -2) = 6 ÷ (-2) = -3

(iv) (-24, 8) = (-24) ÷ 8 = -3

(v) (18, -6) = 18 ÷ (-6) = -3

Short Answer :

1. (i) (-15) × 8 + (-15) × 4

= (-15) × [8 + 4]

= (-15) × 12

= -18

2. (ii) [32 + 2 × 17 + (-6)] ÷ 15

= [32 + 34 − 6] ÷ 15

= [66 − 6] ÷ 15

= 60 ÷ 15

= 4

3. Sum of two integers = 116

One integer = -79

Other integer = Sum of integer – One of integer = 116 – (-79) = 116 + 79 = 195

4. (i) Given that a = -35, b = 10, c = -5

LHS = a + (b + c) = (-35) + [10 + (-5)] = (-35) + 5 = -30

RHS = (a + b) + c = [(-35) + 10] + (-5) = (-25) + (-5) = -(25 + 5) = -30

LHS = RHS

Hence, verified

(ii) a × (b + c) = a × b + a × c

LHS = a × (b + c) = (-35) × [10 + (-5)] = (-35) × 5 = -175

RHS = a × b + a × c = (-35) × 10 + (-35) × (-5) = -350 + (-) × (-) × (35 × 5) = -350 + 175 = -175

LHS = RHS

Hence, verified.

5. (i) (-2) + (-3) = -5

Hence, the required pair of integers = (-2, -3)

(ii) -10 – (-3) = -10 + 3 = -7

Hence, the required pair of integers = (-10, -3)

(iii) (-3) – (-2) = -1

Hence, the required pair of integers = (-3, -2)

(iv) (-4) + (4) = 0

Hence, the required pair of integers = (-4, 4)

Long Answer :

1. Amount in the beginning of the month in the account = ₹ 500

Amount deposited in the account for Jal Board = ₹ 200

Amount paid to Jal Board = ₹ 120

Amount left in the account after the above transactions = ₹ (500 + 200 − 120) = ₹ (700 − 120) = ₹ 580

Amount deposited for LIC India = ₹ 150

Amount paid to LIC India = ₹ 240

Amount left after this transactions = ₹ (580 + 150 − 240) = ₹ (730 − 240) = ₹ 490

2. Freezing point of Hydrogen = -435°F

$C = \frac{5}{9}[-435 - 32]$

$= \frac{5}{9}[-467]$

$= 5 \times (-51.9)$

= 259.5°C or 259°C

For Krypton, freezing point = -251°F

$C = \frac{5}{9}[-251 - 32]$

$= \frac{5}{9}[-283]$

$= 5 \times (-31.4)]$

= -157°C

For Oxygen, freezing point = -369°F

$C = \frac{5}{9}[-369 - 32]$

$= \frac{5}{9}[-401]$

$= 5 \times (44.56)$

= 222.80° C or 223°C

Hence, the required freezing points at sea level in °C for Hydrogen = -259°C, Krypton = -157°C, Oxygen = -223°C.

3.
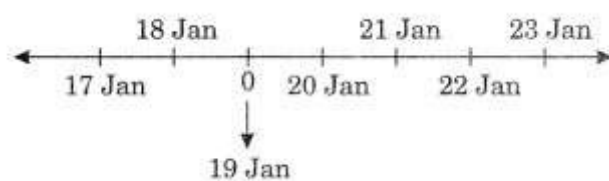
The date before yesterday = 17 January

The date of yesterday = 17 + 1 = 18 January

Today's date = 18 + 1 = 19 January

Tomorrow's date = 19 + 1 = 20 January

Date on 3 days after tomorrow = (20 + 3) = 23rd January.

Assertion and Reason Answers:

1) a) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion

2) b) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.