

Integers

Question Paper, Set 02

Time: 1 hour 30 minutes

Maximum marks: 50

Name: _____ Class: _____ Date: _____

1. Answer all 20 questions. The marks for each question are shown in brackets.
2. Show your working for the 2, 3 and 5 mark questions.
3. The key sheet and worked solutions are at the end of this paper.

1. Write all the integers between -6 and 5 . [1 mark]
2. Find $-69 - 36$. [1 mark]
3. At 7 pm the temperature in Gulmarg was -6°C . By midnight it had fallen by another 9°C . What was the temperature at midnight? [2 marks]
4. Find the value of $-61 + 26$. [1 mark]
5. Find: (i) $67 + 75$ (ii) $-67 - 75$ (iii) $-67 + 75$ (iv) $67 - 75$ [2 marks]
6. Find: (i) $-2948 + 52611$ (ii) $-8493 + 8329$ [3 marks]
7. Subtract 678 from 6613. [2 marks]
8. Priya worked out $3794 - 988$ and got 3816. Is Priya right? If not, write the correct answer. [3 marks]
9. Find $-625 + 541$. [2 marks]
10. Find: (i) $-464 + 318$ (ii) $-784 - 2157$ [3 marks]
11. Find the value of $-82 - 15 + 61$. [2 marks]
12. The results of a shop for five days were: profit ₹747, loss ₹142, profit ₹173, profit ₹758, loss ₹682. Taking a profit as $+$ and a loss as $-$, find the total for the five days. Is it a profit or a loss? [5 marks]
13. Find the value of -14×29 . [1 mark]
14. Without multiplying, say whether -86×-82 is positive or negative. [1 mark]
15. Kiran wrote $-85 \times 871 = 74035$. Find the mistake and write the correct answer. [3 marks]
16. Find: (i) -93×62 (ii) 46×-352 (iii) -594×-38 [5 marks]
17. Without dividing, say whether $\frac{-4416}{4}$ is positive or negative. [1 mark]
18. Evaluate $\frac{3315}{-3}$. [2 marks]

19. Find: (i) $\frac{4208}{-8}$ (ii) $\frac{-26535}{-5}$ (iii) $\frac{759465}{5}$ (iv) $\frac{-94496}{8}$ [5 marks]

20. Find: (i) $6 - 64$ (ii) 6×-64 (iii) $-3 - 19$ (iv) -3×-19 (v) $\frac{-37184}{8}$ [5 marks]

Key sheet

Q	Answer
1	$-5, -4, -3, -2, -1, 0, 1, 2, 3, 4$
2	-105
3	-15°C
4	-35
5	(i) 142, (ii) -142 , (iii) 8, (iv) -8
6	(i) 49663, (ii) -164
7	5935
8	No; $3794 - 988 = 2806$
9	-84
10	(i) -146 , (ii) -2941
11	-36
12	854, that is, a profit of ₹854
13	-406
14	Positive
15	-74035
16	(i) -5766 , (ii) -16192 , (iii) 22572
17	Negative
18	-1105
19	(i) -526 , (ii) 5307, (iii) 151893, (iv) -11812
20	(i) -58 , (ii) -384 , (iii) -22 , (iv) 57, (v) -4648

Solutions

1. Write all the integers between -6 and 5 . [1]

Go along the number line from -6 to 5 , leaving out the two ends and not missing 0 .

$-5, -4, -3, -2, -1, 0, 1, 2, 3, 4$

Ans: $-5, -4, -3, -2, -1, 0, 1, 2, 3, 4$

2. Find $-69 - 36$. [1]

Both are negative: add them and keep the $-$ sign.

$$-69 - 36 = -(69 + 36)$$

$$= -105$$

Ans: -105

3. At 7 pm the temperature in Gulmarg was -6°C . By midnight it had fallen by another 9°C . What was the temperature at midnight? [2]

A fall is a $-$.

$$-6 - 9 = -(6 + 9) = -15$$

The temperature at midnight was -15°C .

Ans: -15°C

4. Find the value of $-61 + 26$. [1]

The signs are different: subtract the smaller from the bigger and keep the sign of the bigger.

$$-61 + 26 = -(61 - 26)$$

$$= -35$$

Ans: -35

5. Find: (i) $67 + 75$ (ii) $-67 - 75$ (iii) $-67 + 75$ (iv) $67 - 75$ [2]

$$(i) 67 + 75 = 142$$

$$(ii) -67 - 75 = -(67 + 75) = -142$$

$$(iii) -67 + 75 = +(75 - 67) = 8$$

$$(iv) 67 - 75 = -(75 - 67) = -8$$

Ans: (i) 142, (ii) -142 , (iii) 8, (iv) -8

6. Find: (i) $-2948 + 52611$ (ii) $-8493 + 8329$ [3]

Same signs: add and keep the sign. Different signs: subtract and keep the sign of the bigger.

$$(i) -2948 + 52611 = +(52611 - 2948) = 49663$$

$$(ii) -8493 + 8329 = -(8493 - 8329) = -164$$

Ans: (i) 49663, (ii) -164

7. Subtract 678 from 6613. [2]

Write the smaller number under the bigger one and subtract column by column, starting from the units.

Units: $13 - 8 = 5$ (borrow 1)

Tens: $10 - 7 = 3$ (borrow 1)

Hundreds: $15 - 6 = 9$ (borrow 1)

Thousands: 5

So $6613 - 678 = 5935$

Ans: 5935

8. Priya worked out $3794 - 988$ and got 3816. Is Priya right? If not, write the correct answer. [3]

Units: $14 - 8 = 6$ (borrow 1)

Tens: $8 - 8 = 0$

Hundreds: $17 - 9 = 8$ (borrow 1)

Thousands: 2

So $3794 - 988 = 2806$

Priya's answer 3816 is wrong: Priya borrowed but forgot to take 1 away from the next column.

Ans: No; $3794 - 988 = 2806$

9. Find $-625 + 541$. [2]

Different signs and the bigger number 625 is negative, so $-625 + 541 = -(625 - 541)$

Count down: $625 \rightarrow 600$ is 25, and $600 \rightarrow 541$ is 59

$625 - 541 = 25 + 59 = 84$

So $-625 + 541 = -84$

Ans: -84

10. Find: (i) $-464 + 318$ (ii) $-784 - 2157$ [3]

(i) Different signs and the bigger number 464 is negative, so $-464 + 318 = -(464 - 318)$

Count down: $464 \rightarrow 400$ is 64, and $400 \rightarrow 318$ is 82

$464 - 318 = 64 + 82 = 146$

So $-464 + 318 = -146$

(ii) Both negative: $-784 - 2157 = -(784 + 2157) = -2941$

Ans: (i) -146 , (ii) -2941

11. Find the value of $-82 - 15 + 61$. [2]

Positive term: 61

Negative terms: $82 + 15 = 97$

$-82 - 15 + 61 = 61 - 97$

$= -(97 - 61) = -36$

Ans: -36

12. The results of a shop for five days were: profit ₹747, loss ₹142, profit ₹173, profit ₹758, loss ₹682. Taking a profit as + and a loss as −, find the total for the five days. Is it a profit or a loss? [5]

$$\text{Total} = 747 - 142 + 173 + 758 - 682$$

$$\text{Positive terms: } 747 + 173 + 758 = 1678$$

$$\text{Negative terms: } 142 + 682 = 824$$

$$747 - 142 + 173 + 758 - 682 = 1678 - 824 \\ = 854$$

So the five days give a profit of ₹854.

Ans: 854, that is, a profit of ₹854

13. Find the value of -14×29 . [1]

$$- \times + = -$$

$$-14 \times 29 = -(14 \times 29) = -406$$

Ans: -406

14. Without multiplying, say whether -86×-82 is positive or negative. [1]

$$- \times - = +$$

So -86×-82 is positive.

Ans: Positive

15. Kiran wrote $-85 \times 871 = 74035$. Find the mistake and write the correct answer. [3]

$$\text{Sign: } - \times + = -$$

$$871 \times 5 = 4355$$

$$871 \times 80 = 69680$$

$$4355 + 69680 = 74035$$

$$\text{So } -85 \times 871 = -74035$$

Kiran's answer 74035 is wrong: Kiran got the sign wrong: $- \times + = -$.

Ans: -74035

16. Find: (i) -93×62 (ii) 46×-352 (iii) -594×-38 [5]

$$\text{(i) } - \times + = -; 93 \times 2 = 186, 93 \times 60 = 5580, 186 + 5580 = 5766$$

$$\text{So } -93 \times 62 = -5766$$

$$\text{(ii) } + \times - = -; 352 \times 6 = 2112, 352 \times 40 = 14080, 2112 + 14080 = 16192$$

$$\text{So } 46 \times -352 = -16192$$

$$\text{(iii) } - \times - = +; 594 \times 8 = 4752, 594 \times 30 = 17820, 4752 + 17820 = 22572$$

$$\text{So } -594 \times -38 = 22572$$

Ans: (i) -5766, (ii) -16192, (iii) 22572

17. Without dividing, say whether $\frac{-4416}{4}$ is positive or negative. [1]

$$\frac{-}{+} = -$$

So $\frac{-4416}{4}$ is negative.

Ans: Negative

18. Evaluate $\frac{3315}{-3}$. [2]

$$\frac{+}{-} = -$$

$$3 \div 3 = 1; 3 \div 3 = 1; 1 \div 3 = 0 \text{ r } 1; 15 \div 3 = 5$$

$$3315 \div 3 = 1105, \text{ so } \frac{3315}{-3} = -1105$$

Ans: -1105

19. Find: (i) $\frac{4208}{-8}$ (ii) $\frac{-26535}{-5}$ (iii) $\frac{759465}{5}$ (iv) $\frac{-94496}{8}$ [5]

$$\text{Rule: } \frac{+}{+} = +, \frac{-}{-} = +, \frac{+}{-} = -, \frac{-}{+} = -$$

$$(i) \frac{+}{-} = -; 42 \div 8 = 5 \text{ r } 2; 20 \div 8 = 2 \text{ r } 4; 48 \div 8 = 6; \text{ so } \frac{4208}{-8} = -526$$

$$(ii) \frac{-}{-} = +; 26 \div 5 = 5 \text{ r } 1; 15 \div 5 = 3; 3 \div 5 = 0 \text{ r } 3; 35 \div 5 = 7; \text{ so } \frac{-26535}{-5} = 5307$$

$$(iii) \frac{+}{+} = +; 7 \div 5 = 1 \text{ r } 2; 25 \div 5 = 5; 9 \div 5 = 1 \text{ r } 4; 44 \div 5 = 8 \text{ r } 4; 46 \div 5 = 9 \text{ r } 1; 15 \div 5 = 3; \text{ so } \frac{759465}{5} = 151893$$

$$(iv) \frac{-}{+} = -; 9 \div 8 = 1 \text{ r } 1; 14 \div 8 = 1 \text{ r } 6; 64 \div 8 = 8; 9 \div 8 = 1 \text{ r } 1; 16 \div 8 = 2; \text{ so } \frac{-94496}{8} = -11812$$

Ans: (i) -526 , (ii) 5307 , (iii) 151893 , (iv) -11812

20. Find: (i) $6 - 64$ (ii) 6×-64 (iii) $-3 - 19$ (iv) -3×-19 (v) $\frac{-37184}{8}$ [5]

Addition uses the addition rule; multiplication and division use the sign rule.

$$(i) 6 - 64 = -(64 - 6) = -58$$

$$(ii) + \times - = -, 6 \times -64 = -384$$

$$(iii) -3 - 19 = -(3 + 19) = -22$$

$$(iv) - \times - = +, -3 \times -19 = 57$$

$$(v) \frac{-}{+} = -; 37 \div 8 = 4 \text{ r } 5; 51 \div 8 = 6 \text{ r } 3; 38 \div 8 = 4 \text{ r } 6; 64 \div 8 = 8; \text{ so } \frac{-37184}{8} = -4648$$

Ans: (i) -58 , (ii) -384 , (iii) -22 , (iv) 57 , (v) -4648
