

Integers

Question Paper, Set 09

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 -5 and 6 . [1 mark]
2. Start at -11 on the number line and make 24 jumps of 1 to the right. Where do you land? [1 mark]
3. Add -56 and -59 . [1 mark]
4. Add -62 and 36 . [1 mark]
5. Find: (i) $18 - 41$ (ii) $-18 + 84$ [2 marks]
6. Find the value of $-199 - 384$. [2 marks]
7. Find: (i) $-645 + 56$ (ii) $866 - 4804$ (iii) $-772 + 809$ (iv) $7593 + 1819$ (v) $-87169 - 3323$ [5 marks]
8. Find $4072 - 334$. [2 marks]
9. A submarine is at -762 m, that is, 762 m below sea level. It rises 155 m. Find its new position as an integer. [3 marks]
10. Work out $-657 - 8493$. [2 marks]
11. Evaluate $762 + 592 - 96 - 614$. [3 marks]
12. The results of a shop for five days were: profit ₹587, profit ₹632, loss ₹567, loss ₹522, profit ₹325. 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 -5×-27 . [1 mark]
14. Find: (i) -4×-42 (ii) 41×-9 [2 marks]
15. Find the value of -87×365 . [3 marks]
16. Find: (i) 18×-15 (ii) -25×264 (iii) -112×-75 [5 marks]
17. Find $\frac{-654}{3}$. [1 mark]
18. Work out $\frac{-7396}{4}$. [2 marks]

19. Find: (i) $\frac{-50065}{5}$ (ii) $\frac{664821}{-3}$

[3 marks]

20. Find: (i) $3 - 79$ (ii) 3×-79 (iii) $-3 - 41$ (iv) -3×-41 (v) $\frac{-53912}{8}$

[5 marks]

Key sheet

Q	Answer
1	$-4, -3, -2, -1, 0, 1, 2, 3, 4, 5$
2	13
3	-115
4	-26
5	(i) -23 , (ii) 66
6	-583
7	(i) -589 , (ii) -3938 , (iii) 37, (iv) 9412, (v) -90492
8	3738
9	-607 m (that is, 607 m below sea level)
10	-9150
11	644
12	455, that is, a profit of ₹455
13	135
14	(i) 168, (ii) -369
15	-31755
16	(i) -270 , (ii) -6600 , (iii) 8400
17	-218
18	-1849
19	(i) -10013 , (ii) -221607
20	(i) -76 , (ii) -237 , (iii) -44 , (iv) 123, (v) -6739

Solutions

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

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

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

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

2. Start at -11 on the number line and make 24 jumps of 1 to the right. Where do you land? [1]

Jumps to the right add.

$$-11 + 24 = +(24 - 11) = 13$$

Ans: 13

3. Add -56 and -59 . [1]

Adding -59 to -56 gives $-56 - 59$.

Both are negative: $-56 - 59 = -(56 + 59)$

$$= -115$$

Ans: -115

4. Add -62 and 36 . [1]

This is $-62 + 36$.

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

$$-62 + 36 = -(62 - 36)$$

$$= -26$$

Ans: -26

5. Find: (i) $18 - 41$ (ii) $-18 + 84$ [2]

Different signs: subtract the smaller from the bigger and keep the sign of the bigger.

$$(i) 18 - 41 = -(41 - 18) = -23$$

$$(ii) -18 + 84 = +(84 - 18) = 66$$

Ans: (i) -23 , (ii) 66

6. Find the value of $-199 - 384$. [2]

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

$$-199 - 384 = -(199 + 384)$$

$$= -583$$

Ans: -583

7. Find: (i) $-645 + 56$ (ii) $866 - 4804$ (iii) $-772 + 809$ (iv) $7593 + 1819$ (v) $-87169 - 3323$ [5]

$$(i) -645 + 56 = -(645 - 56) = -589$$

$$(ii) 866 - 4804 = -(4804 - 866) = -3938$$

$$(iii) -772 + 809 = +(809 - 772) = 37$$

$$(iv) 7593 + 1819 = 9412$$

$$(v) -87169 - 3323 = -(87169 + 3323) = -90492$$

Ans: (i) -589 , (ii) -3938 , (iii) 37, (iv) 9412, (v) -90492

8. Find $4072 - 334$. [2]

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

Units: $12 - 4 = 8$ (borrow 1)

Tens: $6 - 3 = 3$

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

Thousands: 3

So $4072 - 334 = 3738$

Ans: 3738

9. A submarine is at -762 m, that is, 762 m below sea level. It rises 155 m. Find its new position as an integer. [3]

Rising adds: the new position is $-762 + 155$

Different signs and the bigger number 762 is negative, so $-762 + 155 = -(762 - 155)$

Count down: $762 \rightarrow 200$ is 562, and $200 \rightarrow 155$ is 45

$762 - 155 = 562 + 45 = 607$

So $-762 + 155 = -607$

Ans: -607 m (that is, 607 m below sea level)

10. Work out $-657 - 8493$. [2]

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

$-657 - 8493 = -(657 + 8493)$

$= -9150$

Ans: -9150

11. Evaluate $762 + 592 - 96 - 614$. [3]

Positive terms: $762 + 592 = 1354$

Negative terms: $96 + 614 = 710$

$762 + 592 - 96 - 614 = 1354 - 710$

$= 644$

Ans: 644

12. The results of a shop for five days were: profit ₹587, profit ₹632, loss ₹567, loss ₹522, profit ₹325.

Taking a profit as $+$ and a loss as $-$, find the total for the five days. Is it a profit or a loss? [5]

Total = $587 + 632 - 567 - 522 + 325$

Positive terms: $587 + 632 + 325 = 1544$

Negative terms: $567 + 522 = 1089$

$587 + 632 - 567 - 522 + 325 = 1544 - 1089$

$= 455$

So the five days give a profit of ₹455.

Ans: 455, that is, a profit of ₹455

13. Find -5×-27 . [1]

$$- \times - = +$$

$$-5 \times -27 = +(5 \times 27) = 135$$

Ans: 135

14. Find: (i) -4×-42 (ii) 41×-9 [2]

$$(i) - \times - = +, -4 \times -42 = 168$$

$$(ii) + \times - = -, 41 \times -9 = -369$$

Ans: (i) 168, (ii) -369

15. Find the value of -87×365 . [3]

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

$$365 \times 7 = 2555$$

$$365 \times 80 = 29200$$

$$2555 + 29200 = 31755$$

$$\text{So } -87 \times 365 = -31755$$

Ans: -31755

16. Find: (i) 18×-15 (ii) -25×264 (iii) -112×-75 [5]

$$(i) + \times - = -; 18 \times 5 = 90, 18 \times 10 = 180, 90 + 180 = 270$$

$$\text{So } 18 \times -15 = -270$$

$$(ii) - \times + = -; 264 \times 5 = 1320, 264 \times 20 = 5280, 1320 + 5280 = 6600$$

$$\text{So } -25 \times 264 = -6600$$

$$(iii) - \times - = +; 112 \times 5 = 560, 112 \times 70 = 7840, 560 + 7840 = 8400$$

$$\text{So } -112 \times -75 = 8400$$

Ans: (i) -270, (ii) -6600, (iii) 8400

17. Find $\frac{-654}{3}$. [1]

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

$$654 \div 3 = 218, \text{ so } \frac{-654}{3} = -218$$

Ans: -218

18. Work out $\frac{-7396}{4}$. [2]

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

$$7 \div 4 = 1 \text{ r } 3; 33 \div 4 = 8 \text{ r } 1; 19 \div 4 = 4 \text{ r } 3; 36 \div 4 = 9$$

$$7396 \div 4 = 1849, \text{ so } \frac{-7396}{4} = -1849$$

Ans: -1849

19. Find: (i) $\frac{-50065}{5}$ (ii) $\frac{664821}{-3}$ [3]

(i) $\frac{-}{+} = -$

$5 \div 5 = 1; 0 \div 5 = 0; 0 \div 5 = 0; 6 \div 5 = 1 \text{ r } 1; 15 \div 5 = 3$

$50065 \div 5 = 10013$, so $\frac{-50065}{5} = -10013$

(ii) $\frac{+}{-} = -$

$6 \div 3 = 2; 6 \div 3 = 2; 4 \div 3 = 1 \text{ r } 1; 18 \div 3 = 6; 2 \div 3 = 0 \text{ r } 2; 21 \div 3 = 7$

$664821 \div 3 = 221607$, so $\frac{664821}{-3} = -221607$

Ans: (i) -10013 , (ii) -221607

20. Find: (i) $3 - 79$ (ii) 3×-79 (iii) $-3 - 41$ (iv) -3×-41 (v) $\frac{-53912}{8}$ [5]

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

(i) $3 - 79 = -(79 - 3) = -76$

(ii) $+ \times - = -$, $3 \times -79 = -237$

(iii) $-3 - 41 = -(3 + 41) = -44$

(iv) $- \times - = +$, $-3 \times -41 = 123$

(v) $\frac{-}{+} = -$; $53 \div 8 = 6 \text{ r } 5; 59 \div 8 = 7 \text{ r } 3; 31 \div 8 = 3 \text{ r } 7; 72 \div 8 = 9$; so $\frac{-53912}{8} = -6739$

Ans: (i) -76 , (ii) -237 , (iii) -44 , (iv) 123 , (v) -6739
