

Integers

Question Paper, Set 03

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. Start at -14 on the number line and make 22 jumps of 1 to the right. Where do you land? [1 mark]
2. Write the integer that comes just after -51 on the number line. [1 mark]
3. Add -28 and -53 . [1 mark]
4. Add 19 and -38 . [1 mark]
5. At 5 am the temperature in Shimla was -14°C . By noon it had risen by 6°C . What was the temperature at noon? [2 marks]
6. Find: (i) $-2202 + 6601$ (ii) $7562 - 76683$ (iii) $5976 + 406$ (iv) $-749 + 575$ (v) $-66 - 549$ [5 marks]
7. Subtract 8059 from 11037. [3 marks]
8. Simplify $-234 - 6068$. [2 marks]
9. Find $883 + 851 - 74$. [2 marks]
10. Simplify: (i) $577 + 845 - 228 - 199$ (ii) $5755 + 5264 - 4519$ [5 marks]
11. Evaluate 16×-2 . [1 mark]
12. Find: (i) -9×-44 (ii) 3×-29 [2 marks]
13. Find -34×-49 . [2 marks]
14. Meena wrote $-204 \times -61 = 12544$. Find the mistake and write the correct answer. [3 marks]
15. Work out $\frac{-369}{-9}$. [1 mark]
16. Find: (i) $\frac{-67921}{-7}$ (ii) $\frac{-731404}{2}$ [3 marks]
17. Find: (i) $\frac{63608}{8}$ (ii) $\frac{-4572}{-9}$ (iii) $\frac{-963720}{5}$ (iv) $\frac{19695}{-5}$ [5 marks]
18. Find: (i) $-68 + 5$ (ii) -68×5 [2 marks]
19. Find: (i) $-5 + 54$ (ii) -5×54 (iii) $\frac{-1985}{-5}$ [3 marks]

20. Find: (i) $5 - 72$ (ii) 5×-72 (iii) $-6 - 25$ (iv) -6×-25 (v) $\frac{-78116}{4}$

[5 marks]

Key sheet

Q	Answer
1	8
2	−50
3	−81
4	−19
5	−8°C
6	(i) 4399, (ii) −69121, (iii) 6382, (iv) −174, (v) −615
7	2978
8	−6302
9	1660
10	(i) 995, (ii) 6500
11	−32
12	(i) 396, (ii) −87
13	1666
14	12444
15	41
16	(i) 9703, (ii) −365702
17	(i) 7951, (ii) 508, (iii) −192744, (iv) −3939
18	(i) −63, (ii) −340
19	(i) 49, (ii) −270, (iii) 397
20	(i) −67, (ii) −360, (iii) −31, (iv) 150, (v) −19529

Solutions

1. Start at -14 on the number line and make 22 jumps of 1 to the right. Where do you land? [1]

Jumps to the right add.

$$-14 + 22 = +(22 - 14) = 8$$

Ans: 8

2. Write the integer that comes just after -51 on the number line. [1]

Just after means one jump of 1 to the right.

$$-51 + 1 = -(51 - 1) = -50$$

Ans: -50

3. Add -28 and -53 . [1]

Adding -53 to -28 gives $-28 - 53$.

Both are negative: $-28 - 53 = -(28 + 53)$

$$= -81$$

Ans: -81

4. Add 19 and -38 . [1]

This is $19 - 38$.

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

$$19 - 38 = -(38 - 19)$$

$$= -19$$

Ans: -19

5. At 5 am the temperature in Shimla was -14°C . By noon it had risen by 6°C . What was the temperature at noon? [2]

A rise is a +.

$$-14 + 6 = -(14 - 6) = -8$$

The temperature at noon was -8°C .

Ans: -8°C

6. Find: (i) $-2202 + 6601$ (ii) $7562 - 76683$ (iii) $5976 + 406$ (iv) $-749 + 575$ (v) $-66 - 549$ [5]

$$(i) -2202 + 6601 = +(6601 - 2202) = 4399$$

$$(ii) 7562 - 76683 = -(76683 - 7562) = -69121$$

$$(iii) 5976 + 406 = 6382$$

$$(iv) -749 + 575 = -(749 - 575) = -174$$

$$(v) -66 - 549 = -(66 + 549) = -615$$

Ans: (i) 4399, (ii) -69121 , (iii) 6382, (iv) -174 , (v) -615

7. Subtract 8059 from 11037. [3]

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

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

Tens: $12 - 5 = 7$ (borrow 1)

Hundreds: $9 - 0 = 9$ (borrow 1)

Thousands: $10 - 8 = 2$ (borrow 1)

So $11037 - 8059 = 2978$

Ans: 2978

8. Simplify $-234 - 6068$. [2]

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

$$-234 - 6068 = -(234 + 6068)$$

$$= -6302$$

Ans: -6302

9. Find $883 + 851 - 74$. [2]

Positive terms: $883 + 851 = 1734$

Negative term: 74

$$883 + 851 - 74 = 1734 - 74$$

$$= 1660$$

Ans: 1660

10. Simplify: (i) $577 + 845 - 228 - 199$ (ii) $5755 + 5264 - 4519$ [5]

(i) Positive terms: $577 + 845 = 1422$

Negative terms: $228 + 199 = 427$

$$577 + 845 - 228 - 199 = 1422 - 427$$

$$= 995$$

(ii) Positive terms: $5755 + 5264 = 11019$

Negative term: 4519

$$5755 + 5264 - 4519 = 11019 - 4519$$

$$= 6500$$

Ans: (i) 995, (ii) 6500

11. Evaluate 16×-2 . [1]

$$+ \times - = -$$

$$16 \times -2 = -(16 \times 2) = -32$$

Ans: -32

12. Find: (i) -9×-44 (ii) 3×-29 [2]

(i) $- \times - = +$, $-9 \times -44 = 396$

(ii) $+ \times - = -$, $3 \times -29 = -87$

Ans: (i) 396, (ii) -87

13. Find -34×-49 . [2]

Sign: $- \times - = +$

$$49 \times 4 = 196$$

$$49 \times 30 = 1470$$

$$196 + 1470 = 1666$$

$$\text{So } -34 \times -49 = 1666$$

Ans: 1666

14. Meena wrote $-204 \times -61 = 12544$. Find the mistake and write the correct answer. [3]

Sign: $- \times - = +$

$$204 \times 1 = 204$$

$$204 \times 60 = 12240$$

$$204 + 12240 = 12444$$

$$\text{So } -204 \times -61 = 12444$$

Meena's answer 12544 is wrong: the sign is right, but Meena made a slip adding the partial products.

Ans: 12444

15. Work out $\frac{-369}{-9}$. [1]

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

$$369 \div 9 = 41, \text{ so } \frac{-369}{-9} = 41$$

Ans: 41

16. Find: (i) $\frac{-67921}{-7}$ (ii) $\frac{-731404}{2}$ [3]

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

$$67 \div 7 = 9 \text{ r } 4; 49 \div 7 = 7; 2 \div 7 = 0 \text{ r } 2; 21 \div 7 = 3$$

$$67921 \div 7 = 9703, \text{ so } \frac{-67921}{-7} = 9703$$

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

$$7 \div 2 = 3 \text{ r } 1; 13 \div 2 = 6 \text{ r } 1; 11 \div 2 = 5 \text{ r } 1; 14 \div 2 = 7; 0 \div 2 = 0; 4 \div 2 = 2$$

$$731404 \div 2 = 365702, \text{ so } \frac{-731404}{2} = -365702$$

Ans: (i) 9703, (ii) -365702

17. Find: (i) $\frac{63608}{8}$ (ii) $\frac{-4572}{-9}$ (iii) $\frac{-963720}{5}$ (iv) $\frac{19695}{-5}$ [5]

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

$$(i) \frac{+}{+} = +; 63 \div 8 = 7 \text{ r } 7; 76 \div 8 = 9 \text{ r } 4; 40 \div 8 = 5; 8 \div 8 = 1; \text{ so } \frac{63608}{8} = 7951$$

$$(ii) \frac{-}{-} = +; 45 \div 9 = 5; 7 \div 9 = 0 \text{ r } 7; 72 \div 9 = 8; \text{ so } \frac{-4572}{-9} = 508$$

$$(iii) \frac{-}{+} = -; 9 \div 5 = 1 \text{ r } 4; 46 \div 5 = 9 \text{ r } 1; 13 \div 5 = 2 \text{ r } 3; 37 \div 5 = 7 \text{ r } 2; 22 \div 5 = 4 \text{ r } 2; 20 \div 5 = 4; \text{ so } \frac{-963720}{5} = -192744$$

$$(iv) \frac{+}{-} = -; 19 \div 5 = 3 \text{ r } 4; 46 \div 5 = 9 \text{ r } 1; 19 \div 5 = 3 \text{ r } 4; 45 \div 5 = 9; \text{ so } \frac{19695}{-5} = -3939$$

Ans: (i) 7951, (ii) 508, (iii) -192744 , (iv) -3939

18. Find: (i) $-68 + 5$ (ii) -68×5 [2]

(i) Addition, different signs: $-68 + 5 = -(68 - 5) = -63$

(ii) Multiplication: $- \times + = -$, so $-68 \times 5 = -340$

Ans: (i) -63 , (ii) -340

19. Find: (i) $-5 + 54$ (ii) -5×54 (iii) $\frac{-1985}{-5}$ [3]

(i) $-5 + 54 = +(54 - 5) = 49$

(ii) $- \times + = -$, so $-5 \times 54 = -270$

(iii) $\frac{-}{-} = +$; $19 \div 5 = 3 \text{ r } 4$; $48 \div 5 = 9 \text{ r } 3$; $35 \div 5 = 7$; so $\frac{-1985}{-5} = 397$

Ans: (i) 49, (ii) -270 , (iii) 397

20. Find: (i) $5 - 72$ (ii) 5×-72 (iii) $-6 - 25$ (iv) -6×-25 (v) $\frac{-78116}{4}$ [5]

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

(i) $5 - 72 = -(72 - 5) = -67$

(ii) $+ \times - = -$, $5 \times -72 = -360$

(iii) $-6 - 25 = -(6 + 25) = -31$

(iv) $- \times - = +$, $-6 \times -25 = 150$

(v) $\frac{-}{+} = -$; $7 \div 4 = 1 \text{ r } 3$; $38 \div 4 = 9 \text{ r } 2$; $21 \div 4 = 5 \text{ r } 1$; $11 \div 4 = 2 \text{ r } 3$; $36 \div 4 = 9$; so $\frac{-78116}{4} = -19529$

Ans: (i) -67 , (ii) -360 , (iii) -31 , (iv) 150, (v) -19529
