

Integers

Question Paper, Set 10

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 the integer that comes just before -57 on the number line. [1 mark]
2. Add -94 and -47 . [1 mark]
3. Find: (i) $-39 - 32$ (ii) $-275 - 88$ [2 marks]
4. Find the value of $68 - 92$. [1 mark]
5. At 5 am the temperature in Auli was -5°C . By noon it had risen by 21°C . What was the temperature at noon? [2 marks]
6. A shopkeeper made a profit of ₹6785 on Monday and a loss of ₹697 on Tuesday. Taking a profit as $+$ and a loss as $-$, find the result of the two days as an integer. Is it a profit or a loss? [3 marks]
7. Subtract 385 from 4212. [2 marks]
8. Sita worked out $18318 - 8652$ and got 10346. Is Sita right? If not, write the correct answer. [3 marks]
9. Work out $-953 + 728$. [2 marks]
10. Find: (i) $-739 + 495$ (ii) $-819 - 1984$ [3 marks]
11. Work out $41 - 786 - 27$. [2 marks]
12. Evaluate $537 + 454 - 398 + 281 + 443 - 318$. [5 marks]
13. Find -14×-7 . [1 mark]
14. Without multiplying, say whether -47×55 is positive or negative. [1 mark]
15. Vamsi wrote $-427 \times -15 = -6305$. Find the mistake and write the correct answer. [3 marks]
16. Find: (i) -21×-16 (ii) -18×815 (iii) 509×-28 [5 marks]
17. Evaluate $\frac{-918}{6}$. [1 mark]
18. Find $\frac{-8656}{8}$. [2 marks]

19. Find: (i) $\frac{-48016}{-4}$ (ii) $\frac{10120}{-5}$ (iii) $\frac{8085}{3}$ (iv) $\frac{-593004}{2}$

[5 marks]

20. Find: (i) $-7 - 23$ (ii) -7×-23 (iii) $-63 + 7$ (iv) -63×7 (v) $\frac{56775}{-3}$

[5 marks]

Key sheet

Q	Answer
1	−58
2	−141
3	(i) −71, (ii) −363
4	−24
5	16°C
6	6088, that is, a profit of ₹6088
7	3827
8	No; $18318 - 8652 = 9666$
9	−225
10	(i) −244, (ii) −2803
11	−772
12	999
13	98
14	Negative
15	6405
16	(i) 336, (ii) −14670, (iii) −14252
17	−153
18	−1082
19	(i) 12004, (ii) −2024, (iii) 2695, (iv) −296502
20	(i) −30, (ii) 161, (iii) −56, (iv) −441, (v) −18925

Solutions

1. Write the integer that comes just before -57 on the number line. [1]

Just before means one jump of 1 to the left.

$$-57 - 1 = -(57 + 1) = -58$$

Ans: -58

2. Add -94 and -47 . [1]

Adding -47 to -94 gives $-94 - 47$.

Both are negative: $-94 - 47 = -(94 + 47)$

$$= -141$$

Ans: -141

3. Find: (i) $-39 - 32$ (ii) $-275 - 88$ [2]

Both terms are negative in each part: add and keep the $-$ sign.

$$(i) -39 - 32 = -(39 + 32) = -71$$

$$(ii) -275 - 88 = -(275 + 88) = -363$$

Ans: (i) -71 , (ii) -363

4. Find the value of $68 - 92$. [1]

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

$$68 - 92 = -(92 - 68)$$

$$= -24$$

Ans: -24

5. At 5 am the temperature in Auli was -5°C . By noon it had risen by 21°C . What was the temperature at noon? [2]

A rise is a $+$.

$$-5 + 21 = +(21 - 5) = 16$$

The temperature at noon was 16°C .

Ans: 16°C

6. A shopkeeper made a profit of ₹6785 on Monday and a loss of ₹697 on Tuesday. Taking a profit as $+$ and a loss as $-$, find the result of the two days as an integer. Is it a profit or a loss? [3]

Profit = $+6785$, loss = -697

$$6785 - 697 = 6088$$

The answer is 6088: a profit of ₹6088.

Ans: 6088, that is, a profit of ₹6088

7. Subtract 385 from 4212. [2]

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

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

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

Hundreds: $11 - 3 = 8$ (borrow 1)

Thousands: 3

So $4212 - 385 = 3827$

Ans: 3827

8. Sita worked out $18318 - 8652$ and got 10346. Is Sita right? If not, write the correct answer. [3]

Units: $8 - 2 = 6$

Tens: $11 - 5 = 6$ (borrow 1)

Hundreds: $12 - 6 = 6$ (borrow 1)

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

So $18318 - 8652 = 9666$

Sita's answer 10346 is wrong: Sita took the smaller digit from the bigger one in each column instead of borrowing.

Ans: No; $18318 - 8652 = 9666$

9. Work out $-953 + 728$. [2]

Different signs and the bigger number 953 is negative, so $-953 + 728 = -(953 - 728)$

Count down: $953 \rightarrow 800$ is 153, and $800 \rightarrow 728$ is 72

$953 - 728 = 153 + 72 = 225$

So $-953 + 728 = -225$

Ans: -225

10. Find: (i) $-739 + 495$ (ii) $-819 - 1984$ [3]

(i) Different signs and the bigger number 739 is negative, so $-739 + 495 = -(739 - 495)$

Count down: $739 \rightarrow 500$ is 239, and $500 \rightarrow 495$ is 5

$739 - 495 = 239 + 5 = 244$

So $-739 + 495 = -244$

(ii) Both negative: $-819 - 1984 = -(819 + 1984) = -2803$

Ans: (i) -244, (ii) -2803

11. Work out $41 - 786 - 27$. [2]

Positive term: 41

Negative terms: $786 + 27 = 813$

$41 - 786 - 27 = 41 - 813$

$= -(813 - 41) = -772$

Ans: -772

12. Evaluate $537 + 454 - 398 + 281 + 443 - 318$. [5]

Positive terms: $537 + 454 + 281 + 443 = 1715$

Negative terms: $398 + 318 = 716$

$$\begin{aligned} 537 + 454 - 398 + 281 + 443 - 318 &= 1715 - 716 \\ &= 999 \end{aligned}$$

Ans: 999

13. Find -14×-7 . [1]

$- \times - = +$

$$-14 \times -7 = +(14 \times 7) = 98$$

Ans: 98

14. Without multiplying, say whether -47×55 is positive or negative. [1]

$- \times + = -$

So -47×55 is negative.

Ans: Negative

15. Vamsi wrote $-427 \times -15 = -6305$. Find the mistake and write the correct answer. [3]

Sign: $- \times - = +$

$$427 \times 5 = 2135$$

$$427 \times 10 = 4270$$

$$2135 + 4270 = 6405$$

$$\text{So } -427 \times -15 = 6405$$

Vamsi's answer -6305 is wrong: Vamsi got the sign wrong ($- \times - = +$) and also made a slip in the multiplication.

Ans: 6405

16. Find: (i) -21×-16 (ii) -18×815 (iii) 509×-28 [5]

$$(i) - \times - = +; 21 \times 6 = 126, 21 \times 10 = 210, 126 + 210 = 336$$

$$\text{So } -21 \times -16 = 336$$

$$(ii) - \times + = -; 815 \times 8 = 6520, 815 \times 10 = 8150, 6520 + 8150 = 14670$$

$$\text{So } -18 \times 815 = -14670$$

$$(iii) + \times - = -; 509 \times 8 = 4072, 509 \times 20 = 10180, 4072 + 10180 = 14252$$

$$\text{So } 509 \times -28 = -14252$$

Ans: (i) 336, (ii) -14670 , (iii) -14252

17. Evaluate $\frac{-918}{6}$. [1]

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

$$918 \div 6 = 153, \text{ so } \frac{-918}{6} = -153$$

Ans: -153

18. Find $\frac{-8656}{8}$. [2]

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

$$8 \div 8 = 1; 6 \div 8 = 0 \text{ r } 6; 65 \div 8 = 8 \text{ r } 1; 16 \div 8 = 2$$

$$8656 \div 8 = 1082, \text{ so } \frac{-8656}{8} = -1082$$

Ans: -1082

19. Find: (i) $\frac{-48016}{-4}$ (ii) $\frac{10120}{-5}$ (iii) $\frac{8085}{3}$ (iv) $\frac{-593004}{2}$ [5]

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

$$(i) \frac{-}{-} = +; 4 \div 4 = 1; 8 \div 4 = 2; 0 \div 4 = 0; 1 \div 4 = 0 \text{ r } 1; 16 \div 4 = 4; \text{ so } \frac{-48016}{-4} = 12004$$

$$(ii) \frac{+}{-} = -; 10 \div 5 = 2; 1 \div 5 = 0 \text{ r } 1; 12 \div 5 = 2 \text{ r } 2; 20 \div 5 = 4; \text{ so } \frac{10120}{-5} = -2024$$

$$(iii) \frac{+}{+} = +; 8 \div 3 = 2 \text{ r } 2; 20 \div 3 = 6 \text{ r } 2; 28 \div 3 = 9 \text{ r } 1; 15 \div 3 = 5; \text{ so } \frac{8085}{3} = 2695$$

$$(iv) \frac{-}{+} = -; 5 \div 2 = 2 \text{ r } 1; 19 \div 2 = 9 \text{ r } 1; 13 \div 2 = 6 \text{ r } 1; 10 \div 2 = 5; 0 \div 2 = 0; 4 \div 2 = 2; \text{ so } \frac{-593004}{2} = -296502$$

Ans: (i) 12004, (ii) -2024 , (iii) 2695, (iv) -296502

20. Find: (i) $-7 - 23$ (ii) -7×-23 (iii) $-63 + 7$ (iv) -63×7 (v) $\frac{56775}{-3}$ [5]

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

$$(i) -7 - 23 = -(7 + 23) = -30$$

$$(ii) - \times - = +, -7 \times -23 = 161$$

$$(iii) -63 + 7 = -(63 - 7) = -56$$

$$(iv) - \times + = -, -63 \times 7 = -441$$

$$(v) \frac{+}{-} = -; 5 \div 3 = 1 \text{ r } 2; 26 \div 3 = 8 \text{ r } 2; 27 \div 3 = 9; 7 \div 3 = 2 \text{ r } 1; 15 \div 3 = 5; \text{ so } \frac{56775}{-3} = -18925$$

Ans: (i) -30 , (ii) 161, (iii) -56 , (iv) -441 , (v) -18925
