

Simple Equations (on Integers)

Question Paper, Set 01

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. If $x + 22 = 39$, then find x . [1 mark]
2. Find x if $x - 46 = 38$. [1 mark]
3. Find x if $7 \times x = 126$. [1 mark]
4. Find x if $\frac{x}{8} = 148$. [1 mark]
5. Solve: (i) $x + 80 = -68$ (ii) $x - 41 = -25$ (iii) $3 \times x = 174$ (iv) $\frac{x}{15} = 318$ [5 marks]
6. Find x if $x + 25994 = 140113$. [1 mark]
7. Find x if $x \times 36 = 255096$. [2 marks]
8. If $\frac{x}{-3} = -53$, then find x . [1 mark]
9. If $9x + 89 = -145$, then find x . [2 marks]
10. Find x if $\frac{x}{5} - 147 = -240$. [3 marks]
11. Solve: (i) $\frac{4x}{7} + 19 = 23$ (ii) $\frac{9x}{5} - 27 = -108$ [5 marks]
12. Find x if $x - 9 = -67 - x$. [2 marks]
13. Solve $4x + 34 = 41 - 3x$. [3 marks]
14. Solve $8x - 22 + 3x = 2 + 5x$. [3 marks]
15. Solve $44 - 4x = -32$. [2 marks]
16. Solve: (i) $11x + 129 = 223 + 12x$ (ii) $-4x - 12 - 2x = 36$ [5 marks]
17. The sum of two integers is 328. If one of them is 375, then find the other. [2 marks]
18. What number should be added to 278 to get -56 ? [2 marks]
19. What number should be subtracted from -181 to get 63? [3 marks]

- 20.** (i) The product of two integers is -1029 . If one of them is 21 , then find the other. (ii) The difference of two integers is 57 . If the larger of them is -44 , find the smaller. [5 marks]
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Key sheet

Q	Answer
1	$x = 17$
2	$x = 84$
3	$x = 18$
4	$x = 1184$
5	(i) $x = -148$, (ii) $x = 16$, (iii) $x = 58$, (iv) $x = 4770$
6	$x = 114119$
7	$x = 7086$
8	$x = 159$
9	$x = -26$
10	$x = -465$
11	(i) $x = 7$, (ii) $x = -45$
12	$x = -29$
13	$x = 1$
14	$x = 4$
15	$x = 19$
16	(i) $x = -94$, (ii) $x = -8$
17	-47
18	-334
19	-244
20	(i) -49 , (ii) -101

Solutions

1. If $x + 22 = 39$, then find x . [1]

$$x + 22 = 39$$

$$\Rightarrow x = 39 - 22$$

$$\Rightarrow x = 17$$

$$\text{Ans: } x = 17$$

2. Find x if $x - 46 = 38$. [1]

$$x - 46 = 38$$

$$\Rightarrow x = 38 + 46$$

$$\Rightarrow x = 84$$

$$\text{Ans: } x = 84$$

3. Find x if $7 \times x = 126$. [1]

$$7 \times x = 126$$

$$\Rightarrow x = \frac{126}{7}$$

$$\Rightarrow x = 18$$

$$\text{Ans: } x = 18$$

4. Find x if $\frac{x}{8} = 148$. [1]

$$\frac{x}{8} = 148$$

$$\Rightarrow x = 148 \times 8$$

$$\Rightarrow x = 1184$$

$$\text{Ans: } x = 1184$$

5. Solve: (i) $x + 80 = -68$ (ii) $x - 41 = -25$ (iii) $3 \times x = 174$ (iv) $\frac{x}{15} = 318$ [5]

$$(i) \ x + 80 = -68$$

$$\Rightarrow x = -68 - 80$$

$$\Rightarrow x = -148$$

$$(ii) \ x - 41 = -25$$

$$\Rightarrow x = -25 + 41$$

$$\Rightarrow x = 16$$

$$(iii) \ 3 \times x = 174$$

$$\Rightarrow x = \frac{174}{3}$$

$$\Rightarrow x = 58$$

$$(iv) \ \frac{x}{15} = 318$$

$$\Rightarrow x = 318 \times 15$$

$$\Rightarrow x = 4770$$

$$\text{Ans: (i) } x = -148, (ii) \ x = 16, (iii) \ x = 58, (iv) \ x = 4770$$

6. Find x if $x + 25994 = 140113$. [1]

$$x + 25994 = 140113$$

$$\Rightarrow x = 140113 - 25994$$

$$\text{Column subtraction: } 140113 - 25994 = 114119$$

$$\Rightarrow x = 114119$$

$$\text{Ans: } x = 114119$$

7. Find x if $x \times 36 = 255096$. [2]

$$x \times 36 = 255096$$

$$\Rightarrow x = \frac{255096}{36}$$

Long division: $255 \div 36 = 7$, remainder 3; $30 \div 36 = 0$, remainder 30; $309 \div 36 = 8$, remainder 21; $216 \div 36 = 6$, remainder 0

$$\Rightarrow x = 7086$$

$$\text{Ans: } x = 7086$$

8. If $\frac{x}{-3} = -53$, then find x . [1]

$$\frac{x}{-3} = -53$$

$$\Rightarrow x = (-53) \times (-3)$$

$$- \times - = +$$

$$\Rightarrow x = 159$$

$$\text{Ans: } x = 159$$

9. If $9x + 89 = -145$, then find x . [2]

$$9x + 89 = -145$$

$$\Rightarrow 9x = -145 - 89$$

$$\Rightarrow 9x = -234$$

$$\Rightarrow x = \frac{-234}{9}$$

$$\Rightarrow x = -26$$

$$\text{Ans: } x = -26$$

10. Find x if $\frac{x}{5} - 147 = -240$. [3]

$$\frac{x}{5} - 147 = -240$$

$$\Rightarrow \frac{x}{5} = -240 + 147$$

$$\Rightarrow \frac{x}{5} = -93$$

$$\Rightarrow x = -93 \times 5$$

$$\Rightarrow x = -465$$

$$\text{Ans: } x = -465$$

11. Solve: (i) $\frac{4x}{7} + 19 = 23$ (ii) $\frac{9x}{5} - 27 = -108$ [5]

$$(i) \frac{4x}{7} + 19 = 23$$

$$\Rightarrow \frac{4x}{7} = 23 - 19$$

$$\Rightarrow \frac{4x}{7} = 4$$

$$\Rightarrow 4x = 4 \times 7$$

$$\Rightarrow 4x = 28$$

$$\Rightarrow x = \frac{28}{4}$$

$$\Rightarrow x = 7$$

$$(ii) \frac{9x}{5} - 27 = -108$$

$$\Rightarrow \frac{9x}{5} = -108 + 27$$

$$\Rightarrow \frac{9x}{5} = -81$$

$$\Rightarrow 9x = -81 \times 5$$

$$\Rightarrow 9x = -405$$

$$\Rightarrow x = \frac{-405}{9}$$

$$\Rightarrow x = -45$$

Ans: (i) $x = 7$, (ii) $x = -45$

12. Find x if $x - 9 = -67 - x$. [2]

$$x - 9 = -67 - x$$

$$\Rightarrow x + x = -67 + 9$$

$$\Rightarrow 2x = -58$$

$$\Rightarrow x = \frac{-58}{2}$$

$$\Rightarrow x = -29$$

Ans: $x = -29$

13. Solve $4x + 34 = 41 - 3x$. [3]

$$4x + 34 = 41 - 3x$$

$$\Rightarrow 4x + 3x = 41 - 34$$

$$\Rightarrow 7x = 7$$

$$\Rightarrow x = \frac{7}{7}$$

$$\Rightarrow x = 1$$

Ans: $x = 1$

14. Solve $8x - 22 + 3x = 2 + 5x$. [3]

$$8x - 22 + 3x = 2 + 5x$$

$$\Rightarrow 11x - 22 = 2 + 5x$$

$$\Rightarrow 11x - 5x = 2 + 22$$

$$\Rightarrow 6x = 24$$

$$\Rightarrow x = \frac{24}{6}$$

$$\Rightarrow x = 4$$

Ans: $x = 4$

15. Solve $44 - 4x = -32$. [2]

$$44 - 4x = -32$$

$$\Rightarrow -4x = -32 - 44$$

$$\Rightarrow -4x = -76$$

$$\Rightarrow x = \frac{-76}{-4}$$

$$(- \div - = +)$$

$$\Rightarrow x = 19$$

Ans: $x = 19$

16. Solve: (i) $11x + 129 = 223 + 12x$ (ii) $-4x - 12 - 2x = 36$ [5]

$$(i) 11x + 129 = 223 + 12x$$

$$\Rightarrow 11x - 12x = 223 - 129$$

$$\Rightarrow (-1)x = 94$$

$$\Rightarrow x = \frac{94}{-1}$$

$$(+ \div - = -)$$

$$\Rightarrow x = -94$$

$$(ii) -4x - 12 - 2x = 36$$

$$\Rightarrow -6x - 12 = 36$$

$$\Rightarrow -6x = 36 + 12$$

$$\Rightarrow -6x = 48$$

$$\Rightarrow x = \frac{48}{-6}$$

$$(+ \div - = -)$$

$$\Rightarrow x = -8$$

Ans: (i) $x = -94$, (ii) $x = -8$

17. The sum of two integers is 328. If one of them is 375, then find the other. [2]

Let the other integer be x .

$$x + 375 = 328$$

$$\Rightarrow x = 328 - 375$$

$$\Rightarrow x = -47$$

Ans: -47

18. What number should be added to 278 to get -56 ? [2]

Let the number be x .

$$278 + x = -56$$

$$\Rightarrow x = -56 - 278$$

$$\Rightarrow x = -334$$

Ans: -334

19. What number should be subtracted from -181 to get 63 ? [3]

Let the number be x .

$$-181 - x = 63$$

$$\Rightarrow -x = 63 + 181$$

$$\Rightarrow -x = 244$$

$$\Rightarrow x = -244$$

Ans: -244

20. (i) The product of two integers is -1029 . If one of them is 21 , then find the other. (ii) The difference of two integers is 57 . If the larger of them is -44 , find the smaller. [5]

(i) Let the other integer be x .

$$x \times 21 = -1029$$

$$\Rightarrow x = \frac{-1029}{21}$$

Long division: $102 \div 21 = 4$, remainder 18 ; $189 \div 21 = 9$, remainder 0

$$(- \div + = -)$$

$$\Rightarrow x = -49$$

(ii) Let the smaller integer be x .

Larger $-$ smaller $=$ difference

$$-44 - x = 57$$

$$\Rightarrow -x = 57 + 44$$

$$\Rightarrow -x = 101$$

$$\Rightarrow x = -101$$

Ans: (i) -49 , (ii) -101
