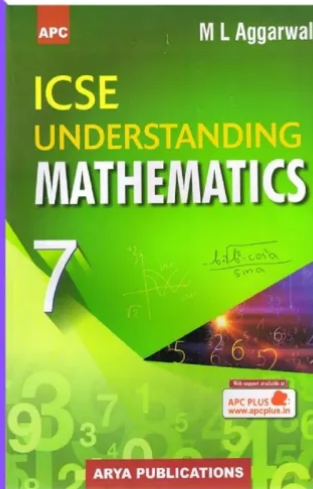


ML Aggarwal Solutions for Class 7 Maths

Chapter 9- Linear Equations and Inequalities



ML Agrawal Solutions

CLASS 7 MATHS

Chapter 9: Linear
Equations and Inequalities

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ML Aggarwal Solutions for Class 7 Maths

Chapter 9- Linear Equations and Inequalities

Class 7: Maths Chapter 9 solutions. Complete Class 7 Maths Chapter 9 Notes.

ML Aggarwal Solutions for Class 7 Maths Chapter 9- Linear Equations and Inequalities

ML Aggarwal 7th Maths Chapter 9, Class 7 Maths Chapter 9 solutions

1. Solve the following equations:

(i) $2(3 - 2x) = 13$

(ii) $(\frac{3}{5})y - 2 = (\frac{7}{10})$

Solution:

(i) Given

$$2(3 - 2x) = 13$$

$$6 - 4x = 13$$

Transposing 6 to R.H.S. we get,

$$-4x = 13 - 6$$

$$-4x = 7$$

We get,

$$x = (7 / -4)$$

$$x = (-7 / 4)$$

(ii) $(\frac{3}{5})y - 2 = (\frac{7}{10})$

Multiplying both sides by 5, we get,

$$3y - 10 = (\frac{7}{10}) \times 5$$

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$$3y - 10 = (7 / 2)$$

Transposing -10 to R.H.S. we get,

$$3y = (7 / 2) + 10$$

On taking L.C.M. we get,

$$3y = \{(7 + 20) / 2\}$$

$$3y = (27 / 2)$$

$$y = \{27 / (2 \times 3)\}$$

We get,

$$y = (9 / 2)$$

$$y = 4\frac{1}{2}$$

2.

$$(i) (x / 2) = 5 + (x / 3)$$

$$(ii) 2 \{x - (3 / 2)\} = 11$$

Solution:

$$(i) (x / 2) = 5 + (x / 3)$$

On multiplying both sides by 6, we get,

$$6 \times (x / 2) = 6 \{5 + (x / 3)\}$$

$$3x = 30 + 2x$$

Transposing 2x to L.H.S. we get,

$$3x - 2x = 30$$

We get,

$$x = 30$$

$$(ii) 2 \{x - (3 / 2)\} = 11$$

$$2x - 3 = 11$$

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Transposing -3 to R.H.S. we get,

$$2x = 11 + 3$$

$$2x = 14$$

We get,

$$x = (14 / 2)$$

$$x = 7$$

3.

$$(i) 7(x - 2) = 2(2x - 4)$$

$$(ii) 21 - 3(x - 7) = x + 20$$

Solution:

$$(i) 7(x - 2) = 2(2x - 4)$$

$$7x - 14 = 4x - 8$$

On transposing 4x to L.H.S. and -14 to R.H.S. we get,

$$7x - 4x = -8 + 14$$

$$3x = 6$$

$$x = (6 / 3)$$

$$x = 2$$

$$(ii) 21 - 3(x - 7) = x + 20$$

$$21 - 3x + 21 = x + 20$$

On further calculation, we get,

$$42 - 3x = x + 20$$

On transposing x to L.H.S. and 42 to R.H.S. we get,

$$-3x - x = 20 - 42$$

$$-4x = -22$$

$$x = (22 / 4)$$

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We get,

$$x = (11 / 2)$$

$$x = 5\frac{1}{2}$$

4. If 7 is added to five times a number, the result is 57. Find the number.

Solution:

Let the required number be x

Five times of this number = 5x

If 7 is added, then the number becomes = 7 + 5x

As per the given condition,

$$7 + 5x = 57$$

$$5x = 57 - 7$$

$$5x = 50$$

$$x = (50 / 5)$$

We get,

$$x = 10$$

Therefore, the required number = 10

5. Find a number, such that one-fourth of the number is 3 more than 7.

Solution:

Let the required number = x

According to the condition,

$$(1 / 4) x - 3 = 7$$

Transposing -3 to R.H.S. we get,

$$(1 / 4) x = 7 + 3$$

$$(1 / 4) x = 10$$

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$$x = 10 \times 4$$

We get,

$$x = 40$$

Therefore, the required number is 40

6. If the replacement set is $\{-5, -3, -1, 0, 1, 3, 4\}$, find the solution set of:

(i) $x < -2$

(ii) $x > 1$

(iii) $x \geq -1$

(iv) $-5 < x < 3$

(v) $-3 \leq x < 4$

(vi) $0 \leq x < 7$

Solution:

Given

Replacement set = $\{-5, -3, -1, 0, 1, 3, 4\}$

(i) The solution set of $x < -2 = \{-5, -3\}$

(ii) The solution set of $x > 1 = \{3, 4\}$

(iii) The solution set of $x \geq -1 = \{-1, 0, 1, 3, 4\}$

(iv) The solution set of $-5 < x < 3 = \{-3, -1, 0, 1\}$

(v) The solution set of $-3 \leq x < 4 = \{-3, -1, 0, 1, 3\}$

(vi) The solution set of $0 \leq x < 7 = \{0, 1, 3, 4\}$

7. Represent the following inequations graphically:

(i) $x \leq 3, x \in \mathbb{N}$

(ii) $x < 4, x \in \mathbb{W}$

(iii) $-2 \leq x < 4, x \in \mathbb{I}$

(iv) $-3 \leq x \leq 2, x \in \mathbb{I}$

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Solution:

Given

$$x \leq 3, x \in \mathbb{N}$$

Therefore,

The solution set = $\{1, 2, 3\}$

The solution set is shown by thick dots on the number line below



(ii) $x < 4, x \in \mathbb{W}$

Therefore,

The solution set = $\{0, 1, 2, 3\}$

The solution set is shown by thick dots on the number line below



(iii) $-2 \leq x < 4, x \in \mathbb{I}$

Therefore,

The solution set = $\{-2, -1, 0, 1, 2, 3\}$

The solution set is shown by thick dots on the number line below



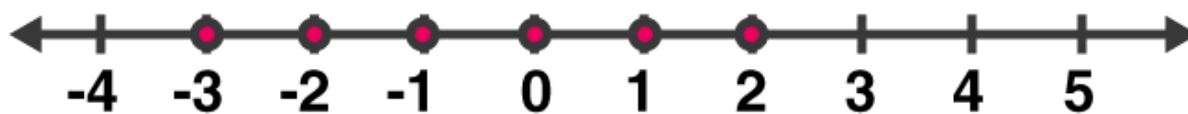
(iv) $-3 \leq x \leq 2, x \in \mathbb{I}$

Therefore,

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The solution set = $\{-3, -2, -1, 0, 1, 2\}$

The solution set is shown by thick dots on the number line below



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- Chapter 2- Fractions and Decimals
- Chapter 3- Rational Numbers
- Chapter 4- Exponents and Powers
- Chapter 5- Sets
- Chapter 6- Ratio and Proportion
- Chapter 7- Percentage and Its Applications
- Chapter 8- Algebraic Expressions
- Chapter 9- Linear Equations and Inequalities
- Chapter 10- Lines and Angles
- Chapter 11- Triangles and its Properties
- Chapter 12- Congruence of Triangles
- Chapter 13- Practical Geometry
- Chapter 14- Symmetry
- Chapter 15- Visualising Solid Shapes
- Chapter 16- Perimeter and Area
- Chapter 17- Data Handling

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About ML Aggarwal

M. L. Aggarwal, is an Indian mechanical engineer, educator. His achievements include research in solutions of industrial problems related to fatigue design. Recipient Best Paper award, Manipal Institute of Technology, 2004. Member of TSTE.

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