LearnoHub
learning simplified

Class 7 - ICSE MATHEMATICS

www.learnohub.com

Simple Linear Equation Daily Practice Problems Solutions

Question 1:

Which of the following is true about Simple Linear Equation? [Level: Easy]

(a) 2x –10 >4

(b) 2x – 10 = 4

(c) 2x – 10 < 4

(d) 2x – 10 ≥ 4

Answer:

Correct option is (b) 2x – 10 = 4

An equation is a statement which states the two expressions are equal.

Question 2:

Jai asked from Sona to solve a linear equation to find the value of x, $\frac{2x}{5} - 4 = 10$? [Level: Easy]

(a) 25

(b) 30

(c) 35

(d) 40

Answer:

Correct option is (c) 35

$\frac{2x}{5} - 4 = 10$

Adding 4 on both the sides,

$\frac{2x}{5} - 4 + 4 = 10 + 4$

$\frac{2x}{5} = 14$

Multiply by 5 on both the sides

$\frac{2x}{5} \times 5 = 14 \times 5$

x= 35

Question 3:

Teacher asked some questions from students about linear equation, one of them is y + 4 = $5\frac{1}{4}$.Can you help them to solve it? [Level: Easy]

(a) $3\frac{1}{4}$

(b) $2\frac{1}{4}$

(c) $1\frac{1}{4}$

(d) $5\frac{1}{4}$

Answer:

Correct option is (c) $1\frac{1}{4}$

y + 4 = $5\frac{1}{4}$

By subtraction 4 on both the sides

y + 4 – 4 = $\frac{21}{4} - 4$

y = $\frac{21-16}{4}$

y = $\frac{5}{4}$

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

Question 4:

Robin asked from his friend Sam to help her to solve the linear equation 4 + 8x = 9x – 13? [Level: Moderate]

(a) 13

(b) 15

(c) 17

(d) 16

Answer:

Correct option is (c) 17

$4 + 8x = 9x - 13$

$4 + 13 = 9x - 8x$

$17 = x$

Question 5:

In an examination, one of the questions based on linear equation is to solve the linear equation $x (x + 2) = x^2 + x + 16$? [Level: Moderate]

(a) 4

(b) 6

(c) 8

(d) 10

Answer:

Correct option is (c) 8

$x (x + 2) = x^2 + x + 16$

$x^2 + 2x = x^2 + x + 16$

Subtracting x^2 on both the sides

$x^2 + 2x - x^2 = x^2 + x + 16 - x^2$

$2x = x + 16$

Subtracting x on both the sides

$2x - x = x + 16 - x$

$2x = 16$

Divide by 2 on both the sides

$\frac{2x}{2} = \frac{16}{2}$

$x = 8$

Question 6:

Solve the linear equation y+ 20% of y= 80? [Level: Moderate]

(a) 20

(b) 40

(c) 60

(d) 80

Answer:

Correct option is (b) 40

y+ 20% of y= 80

$y + \frac{20}{100} \times y = 80$

$y + \frac{1}{5}y = 80$

$\frac{5y+y}{5} = 80$

$\frac{6y}{5} = 80$

Multiply by 5 on both the sides

$\frac{6y}{5} \times 5 = 80 \times 5$

$6y = 80 \times 5$

Divide by 6 on both the sides

$\frac{6y}{6} = \frac{80 \times 5}{6}$

$y = 33\frac{1}{3}$

Question 7:

Divide 40 into two parts, so that the greater part is 4 times the smaller. Find the greater and smaller parts? [Level: Difficult]

(a) 32, 8

(b) 8, 32

(c) 32, 32

(d) 8, 8

Answer:

Correct option is (a) 32, 8

Let the greater part be x.

The smaller part = 40 - x

Given: Greater part = 4 x

smaller part x = 4 × (40 - x)

x = 160-4x

x+ 4x = 160

⇒ 5x= 160

x= $\frac{160}{5}$ = 32

Greater number = x = 32

smaller number = 40 - 32 = 8

Question 8:

The price of 4 tables and 5 chairs is Rs. 700. If a table costs Rs. 40 more than a chair. Find the cost of each? [Level: Moderate]

(a) Rs. 120

(b) Rs. 100

(c) Rs. 160

(d) Rs. 140

Answer:

Correct option is (b) Rs. 100

Let the cost of each chair = Rs. x

The cost of each table = Rs. (x + 40)

Since, cost of 4 tables+ cost of 5 chairs= 700

4 (x+ 40) + 5x = 700

4x + 160 + 5x = 700

9x + 160 = 700

9x = 700 – 160

9x = 560

$x = \frac{540}{9}$

= Rs. 60

Cost of one chair =Rs. x= Rs. 60

Cost of one table = Rs. (60 + 40)

= Rs. 100

Question 9:

A certain number of Rs. 10 notes and a certain number of Rs. 50 notes are kept in a purse so that there are 60 notes in the purse and their total value is Rs. 1,400. Find the number of each type of notes? [Level: Difficult]

(a) 40, 20

(b) 20, 40

(c) 40, 40

(d) 20, 20

Answer:

Correct option is (a) 40, 20

Let the number of Rs. 10 notes = x

The number of Rs. 50 notes= 60 - x

Value of Rs. 10 notes= x×10 = Rs. 10x

value of Rs. 50 notes = (60 - x) x Rs. 50 = Rs. (3000 - 50x)

Total value of all the notes = Rs. 1,400

10x + (3000 - 50x) = 1400

10x + 3000 - 50x = 1400

-40x = 1400 - 3000

-40x= -1600

x= $\frac{1600}{40}$

= 40

The number of Rs. 10 notes = x = 40

The number of Rs. 50 notes = 60 - x

= 60-40

= 20

Question 10:

A father is 3 times as old as his son. In 15 years time, his age will be double his son's age. Find their present ages of son and father. [Level: Moderate]

(a) 15 years, 45 years

(b) 45 years, 15 years

(c) 15 years, 15 years

(d) 45 years, 45 years

Answer:

Correct option is (b) 10 years, 30 years

Let the present age of the son = x years

Present age of the father = 3x years

After 15 years:

Son's age will be (x + 15) years

and father's age will be (3x + 15) years

According to given condition:

3x + 15 = 2(x + 15)

3x+ 15 = 2x+ 30

3x-2x = 30-15

i.e. x= 15

Present age of son = 15 years

and present age of father = 3x = 3 x 15 years = 45 years

Question 11:

Find three consecutive natural numbers such that the sum of the first and the second is 20 more than the third? [Level: Difficult]

(a) 12, 13, 14

(b) 13, 14, 15

(c) 16, 17, 18

(d) 17, 18, 19

Answer:

Correct option is (c) 16, 17, 18

Let the first number be x.

According to the question second number is x + 1

and the third is x + 2.

Sum of first and second numbers =x+(x+1).

According to the question:

⇒x+(x+1)=20+(x+2)

⇒2x+1=22+x

⇒2x–x=22–1

⇒x=20

So, first number =x=20,

Second number =x+1 = 20+1=21

And third number=x+2=20+2=22

Thus, the required consecutive natural numbers are 20, 21 and 22.

Question 12:

The length of a rectangular plot exceeds its breadth by 4 metres. If the perimeter of the plot is 120 metres, find the length and the breadth of the plot? [Level: Moderate]

(a) 28 cm and 38 cm

(b) 28 cm and 32 cm

(c) 30 cm and 28 cm

(d) 25 cm and 35 cm

Answer:

Correct option is (b) 28 cm and 32 cm

Given that

$l=b+4$

Perimeter of rectangular plot = $2(l + b)$

$\Rightarrow 2(l+ b) =120$

$\Rightarrow 2(b+4+b) =120$

$\Rightarrow b+4+b=60$

$\Rightarrow 2b+4=60$

$\Rightarrow 2b=56$

$\Rightarrow b=28$ cm

$\Rightarrow l=28+4=32$ cm

Question 13:

The difference between two supplementary angles is 20°. Find the angles? [Level: Moderate]

(a) 70^o and 110^o

(b) 50^o and 50^o

(c) 60^o and 40^o

(d) 70^o and 40^o

Answer:

Correct option is (a) 70^o and 110^o

Let one angle be x.

Then, the other angle is $x-40^\circ$.

We know that, sum of two supplementary angles is 180°.

Hence,

$x+(x-40^\circ)=180^\circ$

$2x-40^\circ=180^\circ$

$2x=180^\circ+40^\circ$

$2x=220^\circ$

$x=\frac{220^\circ}{2}$

$x=110^\circ$

$\therefore$ Other angle $=x-40=110^o-40^o=70^\circ$

Thus, the angles are 70° and 110°.

Question 14:

The sum of three consecutive odd integers is 81. Find the integers? [Level: Moderate]

(a) 25, 27, 29

(b) 24, 27, 29

(c) 26, 27, 29

(d) 25, 26, 27

Answer:

Correct option is (a) 25, 27, 29

Let the three consecutive odd integers be x, x+2, x+4.

Then according to the problem,

x+x+2+x+4=81

or, 3x+6=81

or, 3x=75

or, x=25.

So, the numbers are 25,27,29.

Question 15:

There is one statement question in the quiz, five times a number is 125. Find that number? [Level: Easy]

(a) 23

(b) 24

(c) 25

(d) 26

Answer:

Correct option is (c) 25

Consider the number = x

Based on the condition

5x = 125

So, we get

x = $\frac{125}{5}$= 25

Hence, the number is 25.

Question 16:

In Olympiad, there is one question of linear equation is that the difference between a number and one-fourth of itself is 30, find the number. [Level: Moderate]

(a) 36

(b) 38

(c) 40

(d) 41

Answer:

Correct option is (c) 40

Consider the number = x

Based on the condition

$x - (\frac{1}{4})x = 30$

Taking LCM

$\frac{4x-x}{4} = 30$

$\frac{3x}{4} = 30$

By cross multiplication

$x = 30 \times \frac{4}{3}$

So, we get

$x = 10 \times 4 = 40$

Hence, the number is 40.

Question 17:

The sum of three consecutive even numbers is 54. Find the numbers? [Level: Moderate]

(a) 16, 18, 20

(b) 14, 16, 18

(c) 18, 19, 20

(d) 12, 13, 14

Answer:

Correct option (a) 16, 18, 20

Consider the first even number = x

Second even number = x + 2

Third even number = x + 4

Based on the condition

x + x + 2 + x + 4 = 54

By further calculation

3x + 6 = 54

3x = 54 – 6 = 48

So, we get

x = $\frac{48}{3}$ = 16

First even number = 16

Second even number = 16 + 2 = 18

Third even number = 16 + 4 = 20

Question 18:

Find three consecutive natural numbers such that the sum of the first and the second is 25 more than the third? [Level: Difficult]

(a) 27, 28, 29

(b) 26, 27, 28

(c) 28, 29, 30

(d) 25, 26, 27

Answer:

Correct option is (b) 26, 27, 28

Consider the first consecutive number = x

Second consecutive number = x + 1

Third consecutive number = x + 2

Based on the condition

x + x + 1 = 25 + x + 2

By further calculation

2x + 1 = 27 + x

2x – x = 27 – 1

So, we get

x = 26

First consecutive number = 26

Second consecutive number = 26 + 1 = 27

Third consecutive number = 26 + 2 = 28

Question 19:

In quiz of mathematics, Radhya stuck on y + 25% of y = 75. Can anybody help her to solve? [Level: Moderate]

(a) 40

(b) 60

(c) 80

(d) 90

Answer:

Correct option is (d) 15

$y + \frac{25}{100} \times y = 75$

Taking LCM

$\frac{100y+25y}{100} = 75$

By cross multiplication

125y = 75 × 100 = 7500

So, we get

$y = \frac{7500}{125} = 60$

Question 20:

Solve the linear equation 9x – 5x + x = 25 + 2x. [Level: Moderate]

(a) -8

(b) -9

(c) -10

(d) -15

Answer:

Correct option is (a) -8

9x – 5x + x = 25 + 2x

By further calculation

9x – 5x + x – 2x = 24

So, we get

– 3x = 24

$x = \frac{24}{-3} = -8$

****