Exercise 9A

Q1

Answer :

(i) Let the required number be x.

So, five times the number will be 5x.

$\therefore 5x = 40$

(ii) Let the required number be x.

So, when it is increased by 8, we get x + 8.

$\therefore x + 8 = 15$

(iii) Let the required number be x.

So, when 25 exceeds the number, we get 25 − x.

$\therefore 25 - x = 7$

(iv) Let the required number be x.

So, when the number exceeds 5, we get x − 5.

$\therefore x - 5 = 3$

(v) Let the required number be x.

So, thrice the number will be 3x.

$\therefore 3x - 5 = 16$

(vi) Let the required number be x.

So, 12 subtracted from the number will be x − 12.

$\therefore x - 12 = 24$

(vii) Let the required number be x.

So, twice the number will be 2x.

$\therefore 19 - 2x = 11$

(viii) Let the required number be x.

So, the number when divided by 8 will be $\frac{x}{8}$.

$\therefore \frac{x}{8} = 7$

(ix) Let the required number be x.

So, four times the number will be 4x.

$\therefore 4x - 3 = 17$

(x) Let the required number be x.

So, 6 times the number will be 6x.

$\therefore 6x = x + 5$

Q2

Answer :

(i) 7 less than the number x equals 14.
(ii) Twice the number y equals 18.
(iii) 11 more than thrice the number x equals 17.
(iv) 3 less than twice the number x equals 13.
(v) 30 less than 12 times the number y equals 6.
(vi) When twice the number z is divided by 3, it equals 8.

Q3

Answer :

(i)

$3x - 5 = 7$
Substituting $x = 4$ *in the given equation* :
$L.H.S.$:
$3 \times 4 - 5$
or, $12 - 5 = 7 = R.H.S.$
$L.H.S. = R.H.S.$
Hence, $x = 4$ *is the root of the given equation.*

(ii)

$3 + 2x = 9$
Substituting $x = 3$ *in the given equation* :
$L.H.S.$:
$3 + 2 \times 3$
or, $3 + 6 = 9 = R.H.S.$
$L.H.S. = R.H.S.$
Hence, $x = 3$ *is the root of the given equation.*

(iii)

$5x - 8 = 2x - 2$
Substituting $x = 2$ *in the given equation* :

$L.H.S.$:	$R.H.S.$:
$5 \times 2 - 8$	$= 2 \times 2 - 2$
or, $10 - 8 = 2$	$= 4 - 2 = 2$

$L.H.S. = R.H.S.$
Hence, $x = 2$ *is the root of the given equation.*

(iv)

$8 - 7y = 1$

Substituting $y = 1$ *in the given equation :*

$L.H.S.$:

$8 - 7 \times 1$

or, $8 - 7 = 1 = R.H.S.$

$L.H.S. = R.H.S.$

Hence, $y = 1$ *is the root of the given equation.*

(v)

$\frac{z}{7} = 8$

Substituting $z = 56$ *in the given equation :*

$L.H.S.$:

$\frac{56}{7} = 8 = R.H.S.$

$L.H.S. = R.H.S.$

Hence, $z = 56$ *is the root of the given equation.*

Q4

Answer :

(i) y + 9 = 13

We try several values of y until we get the L.H.S. equal to the R.H.S.

y	L.H.S.	R.H.S.	Is LHS =RHS ?
1	1 + 9 = 10	13	No
2	2 + 9 = 11	13	No
3	3 + 9 = 12	13	No
4	4 + 9 = 13	13	Yes

∴ y = 4

(ii) x – 7= 10

We try several values of x until we get the L.H.S. equal to the R.H.S.

x	L.H.S.	R.H.S.	Is L.H.S. = R.H.S.?
10	10 – 7 = 3	10	No
11	11 – 7 = 4	10	No
12	12 – 7 = 5	10	No
13	13 – 7 = 6	10	No
14	14 – 7 = 7	10	No
15	15 – 7 = 8	10	No
16	16 – 7 = 9	10	No
17	17 – 7 = 10	10	Yes

********** END **********