EXERCISE 12C

Solve:

1. x/2 + x = 9

Solution:

It is given that
x/2 + x/1 = 9
Taking LCM
(x + 2x)/ 2 = 9
By cross multiplication
x + 2x = 9 × 2
3x = 18
So we get
x = 18/3 = 6

2. x/5 + 2x = 33

Solution:

It is given that
x/5 + 2x/1 = 33
Taking LCM
(x + 10x)/5 = 33
11x/5 = 33
By cross multiplication
11x = 5 × 33 = 165
So we get
x = 165/11 = 15

3. 3x/4 + 4x = 38

Solution:

It is given that
3x/4 + 4x/1 = 38
Taking LCM
(3x + 16x)/ 4 = 38
19x/4 = 38
By cross multiplication
19x = 38 × 4 = 152
So we get
x = 152/19 = 8

4. x/2 + x/5 = 14

Solution:

It is given that
x/2 + x/5 = 14
Taking LCM
(5x + 2x)/ 10 = 14
7x/10 = 14

By cross multiplication
7x = 14 × 10 = 140
So we get
x = 140/7 = 20

5. x/3 – x/4 = 2
Solution:

It is given that
x/3 – x/4 = 2
Taking LCM
(4x – 3x)/ 12 = 2
x/12 = 2
By cross multiplication
x = 12 × 2 = 24

6. y + y/2 = 7/4 – y/4
Solution:

It is given that
y/1 + y/2 = 7/4 – y/4
y/1 + y/2 + y/4 = 7/4
Taking LCM
(4y + 2y + y)/4 = 7/4
7y/4 = 7/4
7y = 7
So we get
y = 7/7 = 1

7. 4x/3 – 7x/3 = 1
Solution:

It is given that
4x/3 – 7x/3 = 1
By further calculation
-3x/3 = 1
So we get
-x = 1
x = - 1

8. 1/2m + 3/4m – m = 2.5
Solution:

It is given that
1/2m + 3/4m – m/1 = 2.5
Taking LCM
(2m + 3m – 4m)/ 4 = 2.5
m/4 = 2.5
By cross multiplication
m = 2.5 × 4 = 10

9. 2x/3 + x/2 – 3x/4 = 1
Solution:

It is given that
2x/3 + x/2 – 3x/4 = 1
Taking LCM
(8x + 6x – 9x)/ 12 = 1
5x/12 = 1
By cross multiplication
5x = 1 × 12 = 12
So we get
x = 12/5 = 2 2/5

10. 3a/4 + a/6 = 66
Solution:

It is given that
3a/4 + a/6 = 66
Taking LCM
(9a + 2a)/ 12 = 66
11a/12 = 66
By cross multiplication
11a = 66 × 12 = 792
So we get
a = 792/11 = 72

11. 2p/3 – p/5 = 35
Solution:

It is given that
2p/3 – p/5 = 35
Taking LCM
(10p – 3p)/ 15 = 35
7p/ 15 = 35
By cross multiplication
7p = 35 × 15 = 525
So we get
p = 525/7 = 75

12. 0.6a + 0.2a = 0.4a + 8
Solution:

It is given that
0.6a + 0.2a = 0.4a + 8
Multiplying and dividing both numerator and denominator by 10
6/10a + 2/10a = 4/10a + 8/1
Taking LCM
(6a + 2a)/ 10 = (4a + 80)/ 10
6a + 2a = 4a + 80
So we get

4a = 80
a = 80/4 = 20

13. p + 1.4p = 48
Solution:

It is given that
p + 1.4p = 48
Multiplying and dividing both numerator and denominator by 10
p + 14/10p = 48
Taking LCM
(10p + 14p)/ 10 = 48
24p/10 = 48
By cross multiplication
24p = 48 × 10 = 480
So we get
p = 480/24 = 20

14. 10% of x = 20
Solution:

It is given that
10% of x = 20
We can write it as
10/100 × x = 20
x/10 = 20
By cross multiplication
x = 20 × 10 = 200

15. y + 20% of y = 18
Solution:

It is given that
y + 20% of y = 18
We can write it as
y + 20/100 × y = 18
Taking LCM
(100y + 20y)/ 100 = 18
By cross multiplication
120y = 18 × 100 = 1800
So we get
y = 1800/120 = 15