SOLVING FRACTIONAL EQUATIONS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. $x/2 = 3$ | $x = 6$

2. $2x/3 = 4$ | $x = 6$

3. $5/x = 1$ | $x = 5$

4. $3/(x + 1) = 1$ | $x = 2$

5. $(2x - 1)/3 = 5$ | $x = 8$

6. $4/(x - 2) = 2$ | $x = 4$

7. $(3x + 4)/2 = 8$ | $x = 4$

8. $5/(2x) = 1/4$ | $x = 10$

9. $(x + 3)/4 = (x - 1)/2$ | $x = 5$

10. $2/(x + 1) = 3/(x + 2)$ | $x = -1$

11. $(5x - 2)/3 = (2x + 1)/4$ | $x = 11/14$

12. $3/(2x - 1) = 4/(3x + 2)$ | $x = -10$

13. $(x + 2)/5 + (x - 1)/3 = 2$ | $x = 7$

14. $2/x + 3/(x + 1) = 5$ | $x = 1$ or $x = -2/5$

15. $1/(x - 1) + 2/(x + 1) = 3/x$ | $x = 3$ or $x = -1/3$

16. $(3x - 1)/(x + 2) = (2x + 1)/(x - 1)$ | $x = 1$ or $x = -1$

17. $4/(x - 3) - 2/(x + 3) = 1$ | $x = 9$ or $x = -1$

18. $5/(2x - 1) - 3/(x + 2) = 0$ | $x = 13$

19. $(x + 1)/(x - 2) - (x - 1)/(x + 2) = 8/(x^2 - 4)$ | $x = -3$

20. $2/(x^2 - 1) + 3/(x + 1) = 4/(x - 1)$ | $x = 3$

MASTER QUESTIONS

M1. A fraction becomes 1/2 when 1 is subtracted from the numerator and 2 is added to the denominator. It becomes 1/3 when 7 is subtracted from the numerator and 2 is subtracted from the denominator. Find the original fraction.

The original fraction is 8/11

M2. The sum of a number and its reciprocal is 10/3. Find the number.

The number is 3 or 1/3

M3. A car travels a certain distance at a speed of 60 km/h and returns at a speed of 40 km/h. The average speed for the whole journey is 48 km/h. Find the distance travelled one way.

The distance is 80 km

M4. Two pipes can fill a tank in 6 hours and 8 hours respectively. A third pipe can empty the tank in 12 hours. How long will it take to fill the tank if all three pipes are opened together?

It will take 4.8 hours

M5. A man spends one-third of his salary on rent, one-quarter on food, and one-fifth on other expenses. If he saves £2600, what is his total salary?

His total salary is £12000