Practice 11-5 ....

Solving Rational Equations

Solve each equation. Check your solution. If there is no solution, write *no solution.*

1. $\frac{1}{x} + \frac{1}{2x} = \frac{1}{6}$

2. $\frac{x}{x + 2} + \frac{4}{x - 2} = 1$

3. $\frac{1}{3s} = \frac{s}{2} - \frac{1}{6s}$

4. $\frac{x + 2}{x + 8} = \frac{x - 2}{x + 4}$

5. $1 - \frac{3}{x} = \frac{4}{x^2}$

6. $\frac{7}{3(a - 2)} - \frac{1}{a - 2} = \frac{2}{3}$

7. $\frac{n}{n - 4} = \frac{2n}{n + 4}$

8. $x + \frac{6}{x} = -7$

9. $\frac{2}{r^2 - r} - 1 = \frac{2}{r - 1}$

10. $\frac{y}{y + 3} = \frac{6}{y + 9}$

11. $\frac{d}{3} + \frac{1}{2} = \frac{1}{3d}$

12. $\frac{2m}{m - 5} = \frac{2m + 16}{m + 3}$

13. $\frac{1}{m - 4} + \frac{1}{m + 4} = \frac{8}{m^2 - 16}$

14. $\frac{5}{x - 2} = \frac{5x + 10}{x^2}$

15. $\frac{k^2}{k + 3} = \frac{9}{k + 3}$

16. $\frac{h - 3}{h + 6} = \frac{2h + 3}{h + 6}$

17. $\frac{h}{6} - \frac{3}{2h} = \frac{8}{3h}$

18. $4 - \frac{3}{y} = \frac{5}{y}$

19. $\frac{1}{b - 3} = \frac{b}{4}$

20. $\frac{1}{t^2} - \frac{2}{t} = \frac{3}{t^2}$

21. $\frac{2}{3n} + \frac{3}{4} = \frac{2}{3}$

22. David and Fiona have a house painting business. It takes Fiona 3 days to paint a certain house. David could paint the same house in 4 days. How long would it take them to paint the house if David and Fiona worked together?

23. Suppose the Williams Spring Water Company has two machines that bottle the spring water. Machine X fills the bottles twice as fast as Machine Y. Working together, it takes them 20 min to fill 450 bottles. How long would it take each machine working alone to fill the 450 bottles?

24. Chao, who is an experienced architect, can draw a certain set of plans in 6 h. It takes Carl, who is a new architect, 10 h to draw the same set of plans. How long would it take them working together to draw the set of plans?

25. For exercise, Joseph likes to walk and Vincent likes to ride his bike. Vincent rides his bike 12 km/h faster than Joseph walks. Joseph walks 20 km in the same amount of time that Vincent rides 44 km. Find the rate that each of them travels.

26. The Ryan Publishing Company has two printing presses. It takes the new printing press 45 min to print 10,000 fliers. Together the two presses can print the 10,000 fliers in 30 min. How long does it take the older printing press by itself to print the 10,000 fliers?