

The Weekly Rigor

No. 205

“A mathematician is a machine for turning coffee into theorems.”

May 26, 2018

30 Problems in Clearing Fractions

(Part 1)

PROBLEMS

Find all solutions for the unknown variable, beginning by using the method of “clearing fractions.”

1. $x + \frac{x}{4} = 10$

2. $x + \frac{x}{3} = 20$

3. $2x + \frac{x}{4} = 9$

4. $2x + \frac{x}{8} = 17$

5. $4x + \frac{x}{4} = 51$

6. $\frac{x}{3} + 3x = 10$

7. $x + \frac{x}{2} + \frac{x}{3} = 11$

8. $\frac{x}{3} + \frac{x}{4} + \frac{x}{6} = 9$

9. $2x + \frac{x}{2} + \frac{x}{7} = 37$

10. $x + \frac{x}{3} + \frac{x}{5} = \frac{69}{5}$

11. $x + \frac{x}{5} + \frac{x}{10} + \frac{x}{15} = 41$

12. $\frac{x}{3} + \frac{x}{6} + \frac{x}{8} + \frac{x}{12} = 17$

13. $3x - \frac{x}{6} + \frac{x}{12} = 70$

14. $x + \frac{x}{7} - \frac{x}{5} = 33$

15. $x + \frac{3x}{5} + \frac{2x}{6} - \frac{x}{2} = \frac{43}{2}$

16. $\frac{x}{10} - \frac{2x}{5} + \frac{3x}{2} - \frac{x}{4} = \frac{19}{4}$

17. $\frac{x}{3} - \frac{x-1}{11} = x - 9$

18. $\frac{9x}{2} - 2x = \frac{x+3}{4} - 12$

19. $\frac{3x+4}{3} = \frac{40}{3} - 2x$

20. $2 - \frac{x+8}{4} = 2x - \frac{x+6}{3}$

21. $\frac{x+3}{2} = \frac{2x+3}{10} + \frac{7x-5}{5}$

22. $\frac{7x+16}{21} = \frac{x+1}{21} + \frac{x}{3}$

23. $\frac{6x-14}{8} + \frac{2x-1}{3} = 2x - 5$

24. $\frac{x+1}{2} + \frac{x+3}{3} = \frac{x+4}{4} + 4$

25. $\frac{x+3}{2} - \frac{x-1}{3} = \frac{x+42}{7} - \frac{x+5}{3}$

26. $\frac{x}{3} - \frac{2x-4}{7} = x - \frac{x+7}{2}$

27. $\frac{x}{5} + \frac{x-2}{3} = x - \frac{5x-1}{6}$

28. $\frac{x}{8} + \frac{x}{5} - \frac{2x}{5} = \frac{x-52}{4}$

29. $\frac{x-4}{4} - \frac{x-1}{3} = \frac{x-26}{5}$

30. $\frac{x-1}{2} + \frac{x-3}{4} - \frac{x-2}{3} = \frac{2}{3}$

“Only he who never plays, never loses.”