

The Weekly Rigor

No. 291

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

January 18, 2020

10 Problems in Clearing First-Degree Equations of Fractions

PROBLEMS

Clear the following equations of fractions.

1. $\frac{3x}{4} - \frac{2x}{3} = \frac{5}{6}$.

2. $\frac{x}{2} + \frac{x}{3} = \frac{5}{3}$.

3. $\frac{2x}{3} + \frac{3x}{4} = \frac{5}{6}$.

4. $\frac{3x}{4} - \frac{5x}{6} = \frac{7}{8}$.

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

6. $\frac{x}{2} + \frac{x}{3} = \frac{16}{3} + \frac{14}{3}$.

$$7. \frac{x}{3} - \frac{x}{4} + \frac{x}{5} = 2.$$

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

$$9. \frac{2x}{3} + \frac{x-1}{6} = \frac{3x+1}{2} - 10.$$

$$10. x + \frac{2x-4}{3} = 12 - \frac{3x-5}{2}.$$

ANSWERS

| | |
|------------------------------------|---------------------------------------|
| 1. $9x - 8x = 10$ | 2. $3x + 2x = 10$ |
| 3. $8x + 9x = 10$ | 4. $18x - 20x = 21$ |
| 5. $3x + x = 24 - 2x$ | 6. $3x + 2x = 32 + 28$ |
| 7. $20x - 15x + 12x = 120$ | 8. $15x - 5x + 90 = 6x + 138$ |
| 9. $4x + (x - 1) = 3(3x + 1) - 60$ | 10. $6x + 2(2x - 4) = 72 - 3(3x - 5)$ |

“Only he who never plays, never loses.”