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Math\_Questions\_0016

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For Problems 1 - 10, solve the equations.

1.  $\frac{x}{20} + \frac{4}{5} = \frac{3}{8}$

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

3.  $\frac{10}{x} - x = 3$

4.  $\frac{x}{5} - \frac{5}{x} = 0$

5.  $\frac{5}{2y} + \frac{8}{y} = 1$

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

7.  $\frac{x+7}{8x-5} = \frac{1}{5}$

8.  $\frac{y+11}{y+8} = \frac{3}{y+8}$

9.  $\frac{5}{y-3} - \frac{30}{y^2-9} = 1$

10.  $\frac{5}{x-1} + x+1 = \frac{5x+4}{x-1}$

11. Zoë can rake her yard in 4 hours. Steffi does the same job in 3 hours. How long would it take the two of them, working together, to rake the yard?

Solution:

12. A passenger car travels 30 km/h faster than a delivery truck. While the car goes 400km, the truck goes 250 km. Find their speed.

Solution:

13. The light travels 558,000 miles in 3 seconds. What is the speed in miles per second?

Solution:

14. Solve  $\frac{t}{a} + \frac{t}{b} = 1$  for  $t$ .

15. Solve  $\frac{3x-9}{x-3} = \frac{5x-4}{2}$

For Problems 16 - 25, simplify the expressions.

16.  $6 - \frac{3}{4 + \frac{5}{6}}$

17.  $1 + \frac{1}{1 - \frac{1}{x^2}}$

$$18. \frac{2 - \frac{1}{a}}{4 + \frac{1}{a}}$$

$$19. \frac{\frac{4}{t}}{4 + \frac{1}{t}}$$

$$20. \frac{\frac{1}{x^2} - \frac{1}{y^2}}{\frac{2}{x} - \frac{2}{y}}$$

$$21. \frac{\frac{5}{4x^3} - \frac{3}{8x}}{\frac{3}{2x} + \frac{3}{4x^3}}$$

$$22. \frac{\frac{a}{b} - \frac{c}{d}}{\frac{b}{a} - \frac{d}{c}}$$

$$23. \frac{\frac{a}{6b^3} + \frac{4}{9b^2}}{\frac{5}{6b} - \frac{1}{9b^3}}$$

$$24. \frac{x - 7 + \frac{5}{x-1}}{x - 3 + \frac{1}{x-1}}$$

$$25. 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{x}}}}$$