

2.4 Solving Equations with Fractions

Name _____

Solve each equation.

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

2.
$$\frac{3}{8} + \frac{1}{2}x = -\frac{1}{4}$$

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

4.
$$\frac{2}{5}x + 3 = \frac{1}{2}x - \frac{9}{10}$$

5.
$$-\frac{3}{10}x + 1 = \frac{1}{10}x - \frac{7}{10}$$

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

Answers: 1. $\frac{1}{2}$; 3. -1 ; 5. $\frac{17}{4}$

Solve.

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

8. $\frac{5}{9}a + \frac{1}{2} = a - \frac{5}{6}$

9. $\frac{3}{4}\left(2p + \frac{1}{3}\right) = 2p - 4\left(\frac{1}{3}p - 1\right)$

10. $2\left(\frac{3}{5}x - \frac{1}{4}\right) + \frac{7}{10} = \frac{1}{20}x + \frac{1}{5}$

Answers: 7. $-\frac{1}{7}$; 9. $\frac{9}{2}$

Solve.

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

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

13. $\frac{3x-1}{4} + 1 = \frac{x-2}{8}$

14. $\frac{x+2}{5} = \frac{x}{2} + \frac{3x+1}{10}$

Answers: 11. $\frac{17}{5}$; 13. $-\frac{8}{5}$

Solve.

15. $-2.9 - 3.2x = 5.1$

16. $1.2 + 2.5x = 2.4$

17. $2.5 - 2.6x = -6(0.3x)$

18. $4.72 - (2.5x - 1.3) = 6.02$

Answers: **15.** -2.5 ; **17.** 3.125

Solve.

19. $-1.4 - 2.3x = 3 - 2.3x$

20. $1.5x = 1.5x + 2.4$

21. $x - 3 = 5x - 4(x + 1) + 1$

22. $x - 4(x - 1) + 1 = -3x + 5$

Answers: **19.** \emptyset ; **21.** $\{x \in \mathbb{R}\}$