pg. 514 # 1-21 odd

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

cross multiply

$8x = 5(x+3)$

$8x = 5x + 15$

$3x = 15$

$x = 5$ solution

check for extraneous

$\frac{5}{5} = \frac{5+3}{8}$

$\frac{5}{5} = \frac{8}{8}$

$1 \stackrel{\checkmark}{=} 1$ no extraneous

11. $\frac{y}{5} + \frac{y}{2} = 7$ (multiply by $\frac{2}{2}$ and $\frac{5}{5}$)

$\frac{2y}{10} + \frac{5y}{10} = 7$

$\frac{7y}{10} = 7$

$70 = 7y$

$10 = y$ solution

check for extraneous

$\frac{10}{5} + \frac{10}{2} = 7$

$2 + 5 = 7$

$7 \stackrel{\checkmark}{=} 7$

no extraneous

13. use common sense! constant on both sides!

$\frac{3x-2}{12} - \frac{1}{6} = \frac{1}{6}$

$+\frac{1}{6} \quad +\frac{1}{6}$

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

$3(3x-2) = 12$

$9x - 6 = 12$

$9x = 18$

$x = 2$ solution

check for extraneous

$\frac{3(2)-2}{12} - \frac{1}{6} = \frac{1}{6}$

$\frac{6-2}{12} - \frac{1}{6} = \frac{1}{6}$

$\frac{4}{12} - \frac{1}{6} = \frac{1}{6}$

$\frac{1}{3} - \frac{1}{6} = \frac{1}{6} \qquad \frac{2}{6} - \frac{1}{6} \stackrel{\checkmark}{=} \frac{1}{6}$

Answers for Lesson 9-6, pp. 514–517 Exercises

1. 5
2. no solution
3. 10
4. 2 or −5
5. $\frac{4}{3}$
6. $-\frac{5}{2}$ or 4
7. $\frac{7}{3}$
8. 3
9. −1
10. $\frac{2}{9}$
11. 10
12. 4
13. 2
14. −1 or 2
15. −1 or 12
16. $-\frac{1}{12}$
17. about −1.45 or 1.65
18. 1
19. −3, −2
20. −9
21. 1
22. Carlos: 32 mi/h, Paul: 12 mi/h
23. passenger train: 112 mi/h, freight train: 92 mi/h
24. $2\frac{2}{3}$ h
25. $1\frac{5}{7}$ h
26. $E = \frac{mV^2}{2}$
27. $E = mc^2$
28. $F = ma$
29. $c = \pm\sqrt{a^2 - b^2}$
30. $T = \pm 2\pi\sqrt{\frac{\ell}{g}}$
31. $B = \pm\sqrt{\frac{2Vm}{r^2 g}}$
32. $2\frac{2}{5}$ days
33. 4 test scores
34. a. $c(x) = \frac{5.50x + 60}{x}$
    b. 14 students
35. a. $L = \frac{24(R-r)}{T}$
    b. 32 in., about 28.24 in., about 25.26 in.
36. a. \$1000
    b. $\frac{15{,}000}{24 + x}(1.60)$
    c. $1000 - \frac{15{,}000}{24 + x}(1.60)$
    d. 30 mi/gal
37. Check students' work.