Answers to Algebra 2 L1.4 Solving Linear Systems in Three Variables Pg 34, #3-33 odd

3. $(1, 2, -1)$

5. $(3, -1, -4)$

7. $\left(\frac{151}{64}, \frac{9}{8}, -\frac{51}{32}\right)$

9. The entire second equation should be multiplied by 4, not just the x-term.

$$\begin{array}{r} 4x - y + 2z = -18 \\ -4x + 8y + 4z = 11 \\ \hline 7y + 6z = -7 \end{array}$$

11. no solution

13. $(z - 1, 1, z)$

15. no solution

17. A small pizza costs \$5, a liter of soda costs \$1, and a salad costs \$3.

19. $(4, -3, 2)$

21. no solution

23. $(7, 3, 5)$

25. $(3, 2, 1)$

27. $\left(\frac{-3z + 3}{5}, \frac{-13z + 13}{5}, z\right)$

29. 1%

31. *Sample answer:* When one variable has the same coefficient or its opposite in each equation. The system

$3x + 2y - 4z = -5$

$2x + 2y + 3z = 8$

$5x - 2y - 7z = -9$

can be solved by eliminating y first.

33. $\ell + m + n = 65, n = \ell + m - 15, l = \frac{1}{3}m$; $\ell = 10$ ft, $m = 30$ ft, $n = 25$ ft