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

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

6. $(1, 1, -3)$

8. $\left(-\frac{22}{13}, \frac{29}{13}, \frac{6}{13}\right)$

10. The entire first equation should be multiplied by 3, not just one side.

$$12x - 3y + 6z = -54$$
$$3x + 3y - 4z = 44$$
$$\overline{15x + 2z = -10}$$

12. no solution

14. $(x, x + 2, 3x + 1)$

16. $(-2y + 1, y, -y -4)$

18. Use the equations $S + L = 1300$, $S + 2C = 1400$, and $S + L + C = 1600$ to describe each price, and then solve the system; A sofa costs $800, a love seat costs $500, and a chair costs $300.

20. $(4, 3, -3)$

22. $\left(-\frac{11}{13}, -\frac{1}{13}, -\frac{30}{13}\right)$

24. $(4, -10, -10)$

26. $(5, 0, -5)$

28. no solution

30. 7 first-place finishers, 10 second-place finishers, 3 third-place finishers

32. *Sample answer:* Eliminate one variable in three of the equations and solve for the remaining variables. Then substitute the values into one of the original equations to find the value of the fourth variable.

34. $A + B + C = 180$, $B = 5A - C$, $C = A + B$; $m\angle A = 30°$, $m\angle B = 60°$, $m\angle C = 90°$