Lesson 6.1.3

6-31. See below:

a. Two parallel planes: first plane's intercepts are (3, 0, 0), (0, 5, 0) (0, 0, 4) and second plane's intercepts are (6, 0, 0), (0, 10, 0), (0, 0, 8).

b. There is no solution because the planes are parallel.

6-32. See below:

a. Intersecting planes: first plane's intercepts are (3, 0, 0), (0, 4, 0), (0, 0, 5) and second plane's intercepts are (6, 0, 0), (0, 2, 0), (0, 0, 5).

b. The solution is the line of intersection $10x - 15y = 0$.

6-33. Both systems contain two planes: one system's planes are parallel, and the other system's planes intersect.

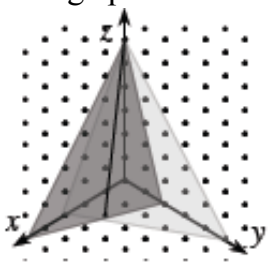
6-34. See below:

a. It is a line.

b. Possible answers: (6, 4, –10), (12, 8, –25)

c. Any plane $Ax + By + 12z = 60$, where $3A + 2B = 90$. Examples: $18x + 18y + 12z = 60$, $2x + 42y + 12z = 60$

6-35. See graph below.



6-36. Yes.

6-37. Sample answer: Yes, because if the numbers are the same, the exponent you would use to get them should be the same, given the same base.

6-38. $y \leq -x + 4$, $y \geq \frac{1}{3}x$

6-39. See below:

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

b. $\frac{1}{(x-3)}$

6-40. See below:

a. Most solving strategies will yield $x = 8$ or $x = 1$.

b. $x = 1$ does not check, so it is extraneous.

6-41. See below:

a. $x = -4$ or $x = \frac{5}{2}$

b. $x = -4$, 2, or 3

c. $x = 0, -1, \frac{7}{2}, -\frac{4}{3}$, 13 or -7

d. Set each of the factors equal to zero and solve the corresponding equations.

6-42. See below:

a. Neither

b. Even

6-43. $x = 3$, $y = 1$, $z = 3$