Odd-Numbered Answers to Exercise Set 6.2: More Systems and Applications

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

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

5. $(1, -1, 2)$

7. $(-4, 16)$ and $(3, 9)$

9. $(-3, 1)$ and $(3, -1)$

11. $(-2, -5)$ and $(2, -5)$

13. $(2, -1)$

15. (a) Let h = the number of hot dogs
s = the number of sodas

System of Equations:
$$3h + 1.75s = 22$$
$$h + s = 9$$

(b) Dillan bought 5 hot dogs and 4 sodas.

17. (a) Let x = the first number
y = the second number

System of Equations:
$$x + y = 77$$
$$x - y = 13$$

(b) The two numbers are 45 and 32.

19. (a) Let w = the width of the rectangle
l = the length of the rectangle

System of Equations:
$$2w + 2l = 26$$
$$lw = 36$$

(b) The rectangle is 4 cm by 9 cm.

21. (a) Let w = the width of the garden
l = the length of the garden

System of Equations:
$$2w + 2l = 200$$
$$w = l - 56$$

(b) The length of the garden is 78 feet and the width of the garden is 22 feet.

23. (a) Let d = the number of dimes
q = the number of quarters

System of Equations:
$$10d + 25q = 340$$
$$d + q = 16$$

(b) Paul has 12 quarters and 4 dimes.

25. (a) Let x = the amount invested in the account
yielding 5% interest
y = the amount invested in the account
yielding 6% interest

System of Equations:
$$0.05x + 0.06y = 139$$
$$x + y = 2,500$$

(b) Kathy invested $1,100 in the account yielding 5% interest, and $1,400 in the account yielding 6% interest.

27. (a) Let J = the number of emails Jen received
A = the number of emails Anthony received

System of Equations:
$$J + A = 64$$
$$J = 2A - 5$$

(b) Jen received 41 emails, and Anthony received 23 emails.