10. Factoring a trinomial is like factoring a number because in both cases you are writing an expression as a product. They are different because the factors of a trinomial are variable expressions and the factors of a number are numbers.

11. The binomial factors correspond to the length and width of the rectangle that can be formed by the algebra tiles that represent the trinomial.

12. $x^2 + 7x - 18$ factors into $(x + 9)(x - 2)$ and $x^2 - 7x - 18$ factors into $(x - 9)(x + 2)$. The signs are opposite.

13. The student found the factors of b rather than the factors of c. The correct factored form of
$x^2 - 11x - 26$ is $(x - 13)(x + 2)$.

14. 6, 9, –6, –9

15. Sample: the last term is missing the factor y^2.

16. If the sign of the last term is positive you are looking for either two positive or two negative factors. If the sign of the last term is negative you are looking for one positive and one negative factor.

17. $(x + 3)$ in. by $(x + 4)$ in.; Answers may vary. Sample: Because the area of a rectangle is the product of its length and its width, factoring the total area into two factors gives you possible dimensions of the rectangle.

18. $(x + 1)(x + 6)$

19. $(x + 1)(x + 1)$

20.

Factors	Sum of Factors
1×20	21
4×5	9
2×10	12

21.

Factors	Sum of Factors
-1×22	21
1×-22	-21
-2×11	9
2×-11	-9

22. $(x + 11)(x + 4)$

23. $(x - 8)(x - 3)$

24. $(x + 5)(x - 3)$

25. $(x - 10)(x - 3)$

26. $(x + 6)(x + 3)$

27. $(x + 2)(x - 4)$

28. $(x + 6y)(x + y)$

29. $(x - 9)(x - 3)$

30. $(x + 8)(x + 2)$

31. $(x - 14y)(x - 2y)$

32. $(x - 11y)(x + y)$

33. $(x + 12)(x + 4)$

34. $(x - 16)(x + 3)$

35. $(x + 9y)(x + 6y)$

36. x, $(x + 1)$, $(x + 2)$; One dimension is x units. Another dimension is one unit greater and the third dimension is two units greater.

37. **a.** $(x + 8)$ ft by $(x - 5)$ ft

b. $(3x - 2)$ ft; Add $(x + 8)$, $(x - 5)$, and $(x - 5)$ to find the total length of rope. No rope is needed for the side along the beach.

c. 80 ft

38. Sarah cuts 2 in. from one side and 6 in. from the other.

39. I. D; II. C; III. A; IV. B

40. A

41. **Part A** game field: $(x + 5)$ by $(x + 90)$; picnic area: $(x + 15)$ by $(x + 30)$; recreation area: $(x + 15)$ by $(x + 20)$

Part B Find the sum of the areas that are given or use the dimensions you found to find the dimension of the park and then multiply to find the total area.

Part C $(x + 90)$ by $(2x + 20)$

Part D Yes; the length of the game field, $x + 90$, is the same as the sum of the lengths of the picnic and recreation areas, $(x + 30) + (x + 20) = 2x + 50$. Set these expressions equal to each other and solve for x.