8-7 **Practice**   *Form K*
Factoring Special Cases

Factor each expression.

1. $c^2 + 2c + 1$

2. $d^2 - 10d + 25$

3. $p^2 - 24p + 144$

4. $w^2 + 14w + 49$

5. $s^2 + 16s + 64$

6. $9g^2 + 24g + 16$

7. $25m^2 - 60m + 36$

8. $4q^2 - 32q + 64$

9. $49y^2 - 84y + 36$

10. $121n^2 - 66n + 9$

11. $81x^2 - 18x + 1$

12. $100t^2 - 100t + 25$

The given expression represents the area. Find the side length of the square.

13.

$36w^2 + 12w + 1$

14.

$81w^2 - 72w + 16$

15.

$9w^2 - 48w + 64$

16.

$121w^2 - 66w + 9$

17. Writing How can you tell that $x^2 - 19x + 90$ is not a perfect square trinomial?

8-7 **Practice** (continued)

Factoring Special Cases

Form K

Factor each expression.

18. $b^2 - 121$

19. $d^2 - 81$

20. $f^2 - 625$

21. $108x^2 - 3$

22. $50n^2 - 8$

23. $405z^2 - 245$

24. $216h^2 - 150$

25. $28y^2 - 28$

26. $50t^2 + 40t + 8$

27. $12n^2 - 36n + 27$

28. $180a^2 - 300a + 125$

29. $250k^2 - 200k + 40$

30. Writing Explain how to recognize a difference of two squares.

31. a. Open-Ended Write an expression that shows the factored form of a perfect-square trinomial.

  b. Explain how you know your expression is a perfect-square trinomial when expanded.

Mental Math For Exercises 32–34, find a pair of factors for each number by using the difference of two squares.

32. 84

33. 55

34. 80

35. Writing The area of a square painting is $225x^4 + 240x^2 + 64$. Explain how you would find a possible length of one side of the painting.