

**Factor each expression.**

1.  $2h^2 + 20h + 50$

2.  $3v^2 - 12v + 12$

3.  $d^2 - 22d + 40$

4.  $4m^2 + 32m + 64$

5.  $10q^2 + 60q + 90$

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

7.  $36x^2 + 60x + 25$

8.  $64x^2 + 48x + 9$

9.  $49n^2 + 14n + 1$

10.  $16s^2 - 72s + 81$

11.  $25r^2 - 80r + 64$

12.  $9g^3 - 24g^2 + 16g$

13.  $144f^2 - 24f + 1$

14.  $4a^2 - 40a + 100$

15.  $49d^2 - 84d + 36$

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



16.  $64x^2 + 80x + 25$



17.  $9y^2 - 24y + 16$



18.  $4t^2 + 36t + 81$

19. **Error Analysis** Describe and correct the error made in factoring the expression at the right.

$$\begin{aligned} & \cancel{175x^2 - 28 = 7(25x^2 - 4)} \\ & \cancel{= 7(5x - 2)(5x + 2)} \\ & = 7(5x - 2)^2 \end{aligned}$$

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**Factor each expression.**

**20.**  $m^2 - 49$

**21.**  $c^3 + 1000$

**22.**  $100p^2 - 16$

**23.**  $8a^3 - 125$

**24.**  $64n^3 - 1$

**25.**  $25x^2 - 144$

**26.**  $250g^3 + 16$

**27.**  $2d^3 - 54$

**28.**  $27x^2 - 48$

**29. Writing** Explain how to recognize a perfect-square trinomial.

**30. Writing** The area of a square parking lot is  $49p^4 - 84p^2 + 36$ . Explain how you would find the length of the parking lot.