

Paper Practice 10.7

Factoring Special Products

Examples 1 and 2

Factor each polynomial.

1. $a^2 - 196$

2. $b^4 - 16$

3. $3c^3 + 5c^2 - 12c - 20$

4. $d^2 - 25f^2$

5. $g^4 - 1$

6. $5h^3 - h^2 - 45h + 9$

7. $256 - j^2$

8. $k^4 - 1296$

9. $2m^3 + 7m^2 - 72m - 252$

10. $12g^2 - 243h^2$

11. $121y^2 - 49$

12. $48 - 3k^2$

Example 3

13. **CONSTRUCTION** A builder is installing a square window with side length x feet in a wall that is 10 feet tall and 10 feet long. Find the factors representing the area of the remaining wall space after the window is installed.

14. **PARACHUTE** The area of a round parachute can be represented by the expression $\pi x^2 - 36\pi$. Factor the expression.

Examples 4 and 5

Determine whether each trinomial is a perfect square trinomial. Write *yes* or *no*. If so, factor it.

15. $4a^2 + 28a + 49$

16. $b^2 - 36$

17. $4c^2 + 4c - 15$

18. $d^2 - 22d + 121$

19. $9h^2 + 12h + 4$

20. $f^2 - 17f + 60$