Extra Practice

Lesson 9-6

(pages 508–514)

Determine whether each trinomial is a perfect square trinomial. If so, factor it.

1. $x^2 + 12x + 36$ **yes; $(x + 6)^2$**
2. $n^2 - 13n + 36$ **no**
3. $a^2 + 4a + 4$ **yes; $(a + 2)^2$**
4. $x^2 - 10x - 100$ **no**
5. $2n^2 + 17n + 21$ **no**
6. $4a^2 - 20a + 25$ **yes; $(2a - 5)^2$**

Factor each polynomial, if possible. If the polynomial cannot be factored, write *prime*.

7. $3x^2 - 75$ **$3(x - 5)(x + 5)$**
8. $n^2 - 8n + 16$ **$(n - 4)^2$**
9. $4p^2 + 12pr + 9r^2$ **$(2p + 3r)^2$**
10. $6a^2 + 72$ **$6(a^2 + 12)$**
11. $s^2 + 30s + 225$ **$(s + 15)^2$**
12. $24x^2 + 24x + 9$ **$3(8x^2 + 8x + 3)$**
13. $1 - 10z + 25z^2$ **$(1 - 5z)^2$**
14. $28 - 63b^2$ **$7(2 - 3b)(2 + 3b)$**
15. $4c^2 + 2c - 7$ **prime**

Solve each equation. Check your solutions.

16. $x^2 + 22x + 121 = 0$ **$\{-11\}$**
17. $343d^2 = 7$ **$\left\{\pm\frac{1}{7}\right\}$**
18. $(a - 7)^2 = 5$ **$7 \pm \sqrt{5}$**
19. $c^2 + 10c + 36 = 11$ **$\{-5\}$**
20. $16s^2 + 81 = 72s$ **$\left\{\frac{9}{4}\right\}$**
21. $9p^2 - 42p + 20 = -29$ **$\left\{\frac{7}{3}\right\}$**