

Chapter 7
Form F

Choose the correct answer to each problem.

For problems 1 – 13, factor completely or state that the polynomial is prime.

1. $x^2 - 7x - 30$
a. $(x+10)(x-3)$ b. $(x-10)(x+3)$ c. $(x+6)(x-5)$ d. Prime
2. $16x^2 + 25$
a. $(4x-5)^2$ b. $(4x-5)(4x+5)$ c. $(4x+5)^2$ d. Prime
3. $98x^2 - 224x + 128$
a. $2(49x^2 - 112x + 64)$ b. $2(7x-8)^2$
c. $2(7x+8)(7x-8)$ d. Prime
4. $15x^6 - 9x^5 + 12x^4 + 9x^3$
a. $3x^5(5x-3)(4x+3)$ b. $3x^3(5x^3 - 3x^2 + 4x + 3)$
c. $3x^3(5x^4 - 3x^3 + 4x^2 + 3x)$ d. $3x^3(5x-3)(4x+3)$
5. $12x^2 - 25xy + 12y^2$
a. $(4x-3y)(3x-4y)$ b. $(4x+3y)(3x+4y)$
c. $(4x-3y)^2$ d. Prime
6. $x^2 + 7x + 6$
a. $(x+1)(x+6)$ b. $(x+1)(x+1)$ c. $(x+1)(7x+1)$ d. Prime
7. $8x^2y^2 - 18y^4$
a. $2y^2(2x-3y)^2$ b. $2y^2(2x-3y)(2x+3y)$
c. $2y^2(4x^2 - 12y + 9y^2)$ d. $2xy^2(4x-12y+9y^2)$
8. $8x^3 + 64$
a. $(2x+4)^3$ b. $8(x+2)^3$
c. $(2x+4)(4x^2 - 8x + 16)$ d. $8(x+2)(x^2 - 2x + 4)$
9. $2y^3 - 5y^2 - 12y + 30$
a. $(y+3)(y-2)(2y-5)$ b. $(y-3)(y+2)(2y-5)$
c. $(y^2 - 6)(2y-5)$ d. Prime
10. $x^2y^2 + 11x^2y + 24x^2$
a. $x^2(y+3)(y+8)$ b. $x^2(y+6)(y+4)$
c. $x^2(y+12)(y-2)$ d. Prime

11. $7x^2 - 21y^2$
 a. $7(x - y)^2$
 b. $7(x + 3y)(x - y)$
 c. $7(x^2 - 3y^2)$
 d. Prime
12. $15x^2 + x - 6$
 a. $(5x + 3)(3x - 2)$
 b. $(5x - 3)(3x + 2)$
 c. $(5x + 2)(3x - 3)$
 d. Prime
13. $3x^2 - 18x - 48$
 a. $3(x^2 - 6x - 16)$
 b. $(3x + 6)(x - 8)$
 c. $3(x + 8)(x - 2)$
 d. $3(x - 8)(x + 2)$

For problems 14 – 18, solve each quadratic equation.

14. $x^2 = -10x$
 a. $\{10, 0\}$
 b. $\{0, 10\}$
 c. $\{10\}$
 d. No solution
15. $x^2 + 10x - 24 = 0$
 a. $\{4, 6\}$
 b. $\{-6, -4\}$
 c. $\{-2, 12\}$
 d. $\{-12, 2\}$
16. $25x^2 = 64$
 a. $\left\{\frac{8}{5}\right\}$
 b. $\left\{-\frac{5}{8}, \frac{8}{5}\right\}$
 c. $\left\{-\frac{8}{5}, \frac{8}{5}\right\}$
 d. No solution
17. $2x(4 + 7) = 30$
 a. $\left\{-3, \frac{5}{4}\right\}$
 b. $\left\{15, \frac{23}{4}\right\}$
 c. $\left\{3, -\frac{5}{4}\right\}$
 d. $\left\{-15, -\frac{23}{4}\right\}$
18. $4x^2 + 20x + 25 = 0$
 a. $\left\{\frac{5}{2}, \frac{5}{2}\right\}$
 b. $\left\{\frac{5}{2}\right\}$
 c. $\left\{0, \frac{5}{2}\right\}$
 d. $\left\{-\frac{5}{2}\right\}$
19. A rock is thrown from the top of a tall building. The formula $h = -16t^2 - 2t + 524$ describes the height of the rock, h , in feet, t seconds after the rock is thrown. How long after the rock is thrown is it 321 feet above the ground?
 a. $\frac{29}{8}$ sec
 b. $\frac{7}{2}$ sec
 c. $\frac{37}{8}$ sec
 d. $\frac{9}{2}$ sec
20. A rectangular parking lot has a length twice as long as the width. The area of the parking lot is 288 square yards. Find the length and the width of the parking lot.
 a. width 10 yards; length 24 yards
 b. width 11 yards; length 22 yards
 c. width 12 yards; length 24 yards
 d. width 13 yards; length 26 yards