

Chapter 7
Form D

Choose the correct answer to each problem.

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

1. $x^2 - 2x - 35$
a. $(x-7)(x+5)$ b. $(x+7)(x+5)$ c. $(x-7)(x-5)$ d. Prime
2. $2x^2 - 98$
a. $2(x^2 - 49)$ b. $2(x+7)(x-7)$ c. $2(x-7)^2$ d. Prime
3. $27x^3 + 125$
a. $(3x+5)^3$ b. $(3x+5)(9x^2 - 15x + 25)$
c. $(3x+5)(9x^2 + 15x + 25)$ d. $(3x+5)(9x^2 - 30x + 25)$
4. $81x^2 - 72xy + 16y^2$
a. $(9x-4y)^2$ b. $(9x-4y)(9x+4y)$ c. $(9x+4y)^2$ d. Prime
5. $18x^2 + 9x$
a. $9(2x^2 + x)$ b. $x(18x+9)$ c. $9x(2x+1)$ d. $9x(2x)$
6. $6x^2 + 7x - 20$
a. $(2x-10)(3x+2)$ b. $(2x+5)(3x-4)$ c. $(6x-4)(x+5)$ d. Prime
7. $4x^2 + 25$
a. $(2x+5)^2$ b. $(2x+5)(2x-5)$ c. $(2x-5)^2$ d. Prime
8. $4x^2y - 4xy - 120y$
a. $4y(x^2 - x - 30)$ b. $4y(x+6)(x-5)$
c. $4y(x-6)(x+5)$ d. Prime
9. $5x^2 + 3x - 2$
a. $(5x-1)(x+2)$ b. $(5x+1)(x-2)$ c. $(5x-2)(x+1)$ d. Prime
10. $81x^4 - 16$
a. $(9x^2 - 4)(9x^2 + 4)$ b. $(3x-2)^4$
c. $(9x^2 + 4)(3x+2)(3x-2)$ d. $(3x+2)^2(3x-2)^2$

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11. $y^3 + 3y^2 - 8y - 24$
a. $y^2(y+3) - 8(y+3)$ b. $(y^2 - 8)(y+3)$
c. $(y^2 - 8)(y+3)(y+3)$ d. $(y-4)(y-2)(y+3)$
12. $x^2 + 16x + 64$
a. $(x+8)^2$ b. $(x-16)^2$ c. $(x-8)^2$ d. $(x+8)(x-8)$
13. $5x^4 - 35x^3 - 90x^2$
a. $5x^2(x^2 - 7x - 18)$ b. $5x^2(x-6)(x-3)$
c. $5x^2(x-9)(x+2)$ d. Prime

For problems 14 – 18, solve each quadratic equation.

14. $x^2 - 2x = 0$
a. $\{0, -2\}$ b. $\{-2, 2\}$ c. $\{0, 2\}$ d. $\{-2, 1\}$
15. $x^2 - 3x - 10 = 0$
a. $\{5, 2\}$ b. $\{5, -2\}$ c. $\{-5, 2\}$ d. $\{-5, -2\}$
16. $3x(3x+4) = -4$
a. $\left\{-\frac{3}{2}\right\}$ b. $\left\{-\frac{2}{3}\right\}$ c. $\left\{-\frac{4}{3}, -\frac{8}{3}\right\}$ d. $\left\{-\frac{4}{3}, 0\right\}$
17. $25x^2 = 16$
a. $\left\{\frac{4}{5}\right\}$ b. $\left\{-\frac{4}{5}\right\}$ c. $\left\{-\frac{4}{5}, \frac{4}{5}\right\}$ d. $\left\{-\frac{16}{25}, \frac{16}{25}\right\}$
18. $2x^2 - x = 15$
a. $\{15, 8\}$ b. $\{3, 5\}$ c. $\left\{-3, \frac{5}{2}\right\}$ d. $\left\{-\frac{5}{2}, 3\right\}$
19. A rock is thrown from the top of a tall building. The formula $h = -16t + 234$ describes the height of the rock, h , in feet, t seconds after the rock is thrown. How long after the rock is thrown does it hit the ground?
a. $\frac{9}{4}$ sec b. $\frac{13}{2}$ sec c. $\frac{9}{2}$ sec d. $\frac{3}{4}$ sec
20. A rectangular parking lot has a length that is 4 yards greater than the width. The area of the parking lot is 140 square yards. Find the length and the width of the parking lot.
a. width 10 yards; length 14 yards b. width 8 yards; length 12 yards
c. width 14 yards; length 18 yards d. width 6 yards; length 10 yards