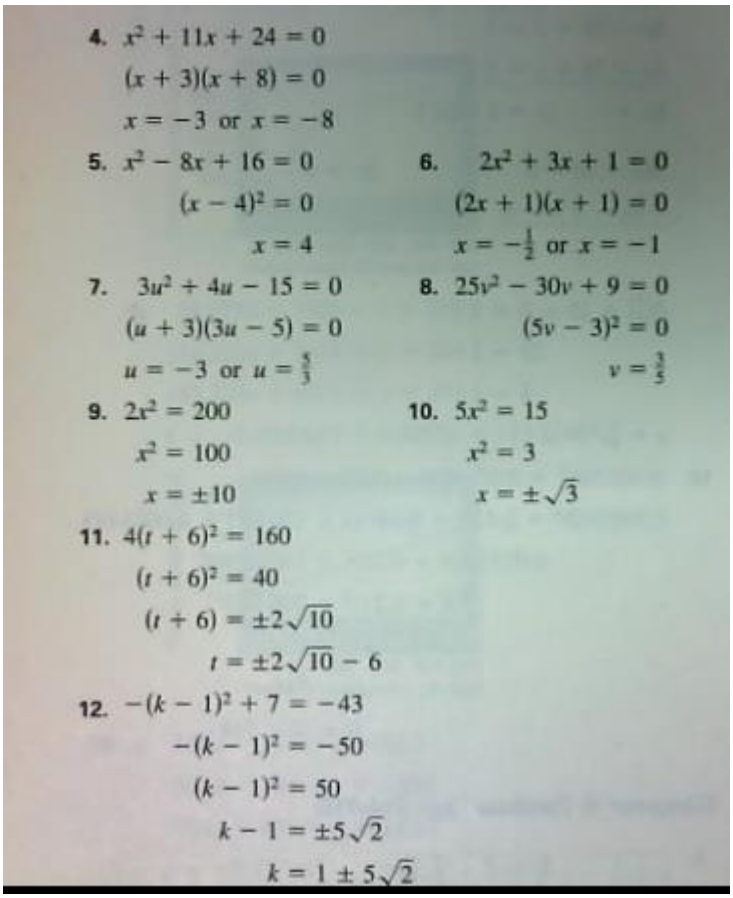
Unit 1 Review ANSWERS – Page 315 #4-19 (skip 17), 24-26, 30-32



4. $x^2 + 11x + 24 = 0$
$(x + 3)(x + 8) = 0$
$x = -3$ or $x = -8$

5. $x^2 - 8x + 16 = 0$
$(x - 4)^2 = 0$
$x = 4$

6. $2x^2 + 3x + 1 = 0$
$(2x + 1)(x + 1) = 0$
$x = -\frac{1}{2}$ or $x = -1$

7. $3u^2 + 4u - 15 = 0$
$(u + 3)(3u - 5) = 0$
$u = -3$ or $u = \frac{5}{3}$

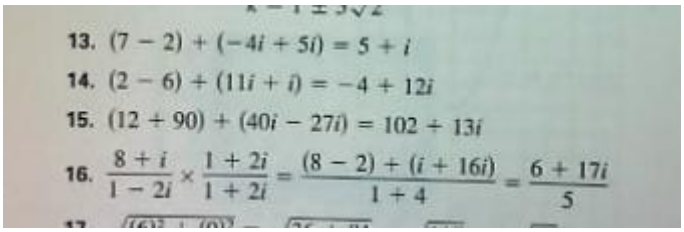
8. $25v^2 - 30v + 9 = 0$
$(5v - 3)^2 = 0$
$v = \frac{3}{5}$

9. $2x^2 = 200$
$x^2 = 100$
$x = \pm 10$

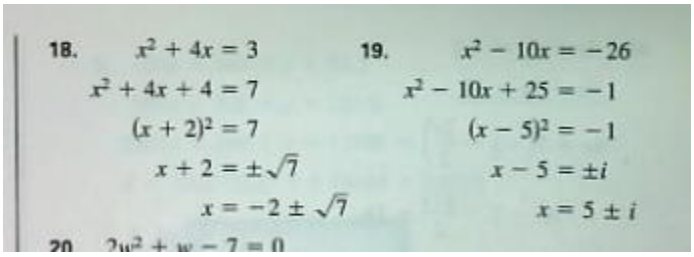
10. $5x^2 = 15$
$x^2 = 3$
$x = \pm\sqrt{3}$

11. $4(t + 6)^2 = 160$
$(t + 6)^2 = 40$
$(t + 6) = \pm 2\sqrt{10}$
$t = \pm 2\sqrt{10} - 6$

12. $-(k - 1)^2 + 7 = -43$
$-(k - 1)^2 = -50$
$(k - 1)^2 = 50$
$k - 1 = \pm 5\sqrt{2}$
$k = 1 \pm 5\sqrt{2}$

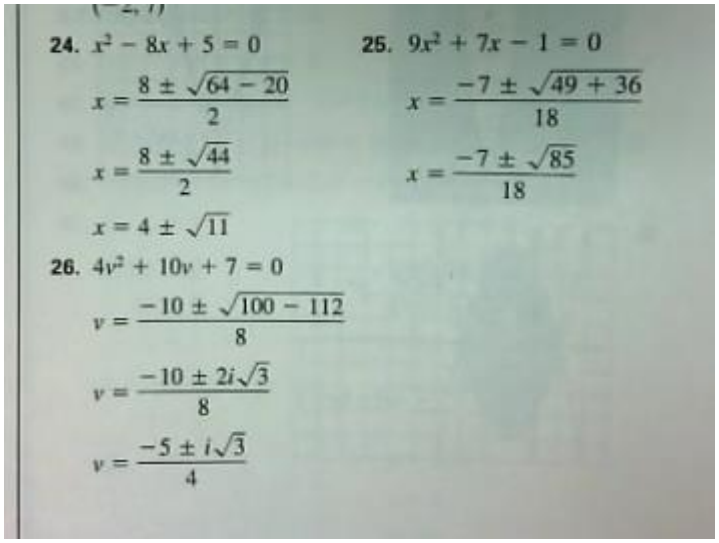


13. $(7 - 2) + (-4i + 5i) = 5 + i$
14. $(2 - 6) + (11i + i) = -4 + 12i$
15. $(12 + 90) + (40i - 27i) = 102 + 13i$
16. $\frac{8 + i}{1 - 2i} \times \frac{1 + 2i}{1 + 2i} = \frac{(8 - 2) + (i + 16i)}{1 + 4} = \frac{6 + 17i}{5}$



18. $x^2 + 4x = 3$
$x^2 + 4x + 4 = 7$
$(x + 2)^2 = 7$
$x + 2 = \pm\sqrt{7}$
$x = -2 \pm \sqrt{7}$

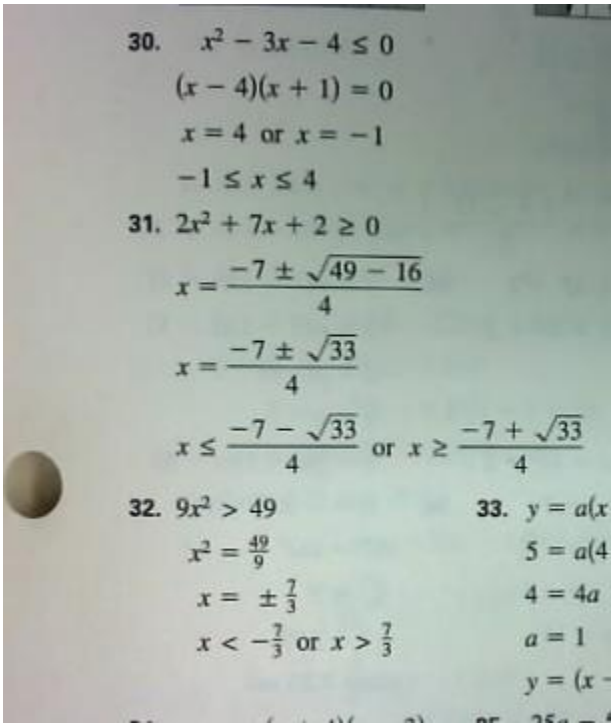
19. $x^2 - 10x = -26$
$x^2 - 10x + 25 = -1$
$(x - 5)^2 = -1$
$x - 5 = \pm i$
$x = 5 \pm i$



24. $x^2 - 8x + 5 = 0$
$x = \frac{8 \pm \sqrt{64 - 20}}{2}$
$x = \frac{8 \pm \sqrt{44}}{2}$
$x = 4 \pm \sqrt{11}$

25. $9x^2 + 7x - 1 = 0$
$x = \frac{-7 \pm \sqrt{49 + 36}}{18}$
$x = \frac{-7 \pm \sqrt{85}}{18}$

26. $4v^2 + 10v + 7 = 0$
$v = \frac{-10 \pm \sqrt{100 - 112}}{8}$
$v = \frac{-10 \pm 2i\sqrt{3}}{8}$
$v = \frac{-5 \pm i\sqrt{3}}{4}$



30. $x^2 - 3x - 4 \le 0$
$(x - 4)(x + 1) = 0$
$x = 4$ or $x = -1$
$-1 \le x \le 4$

31. $2x^2 + 7x + 2 \ge 0$
$x = \frac{-7 \pm \sqrt{49 - 16}}{4}$
$x = \frac{-7 \pm \sqrt{33}}{4}$
$x \le \frac{-7 - \sqrt{33}}{4}$ or $x \ge \frac{-7 + \sqrt{33}}{4}$

32. $9x^2 > 49$
$x^2 = \frac{49}{9}$
$x = \pm\frac{7}{3}$
$x < -\frac{7}{3}$ or $x > \frac{7}{3}$

33. $y = a(x$
$5 = a(4$
$4 = 4a$
$a = 1$
$y = (x$

30. $[-1, 4]$

31. $(-\infty, -3.19] \cup [-.31, \infty)$

32. $(-\infty, -\frac{7}{3}) \cup (\frac{7}{3}, \infty)$

Page 318 #2-8, List 9 graphing characteristics for #10, and #14 a-c

Chapter 5 Standardized Test *(pp. 318–319)*

1. B

2. $4x^2 + 4x - 35 = (2x - 5)(2x + 7)$ E

3. $y = x^2 - 13x + 40$

   $0 = (x - 5)(x - 8)$

   5, 8

   D

4. $4(x - 1)^2 = 28$

   $(x - 1)^2 = 7$

   $x - 1 = \pm\sqrt{7}$

   $x = 1 \pm \sqrt{7}$

   C

5. $(-12 + 8i)(10 - i) = (-120 + 8) + (80i + 12i)$

   $= -112 + 92i$

   D

6. C

7. $\sqrt{2^2 - 4(3)(-7)} = 88$

   2 real solutions

   A

8. $x^2 + 7x - 8 > 0$

   $x^2 + 7x - 8 = 0$

   $(x + 8)(x - 1) = 0$

   $x = -8$ or $x = 1$

   $x < -8$ or $x > 1$

   B

14. a. $h = -16t^2 + 40t + 3$

    b. $h - 3 = -16t^2 + 40t$

    $h - 3 = -16(t^2 - 2.5t + 1.5625)$

    $h - 3 = -16(t - 1.25)^2$

    $h = -16(t - 1.25)^2 + 3 + 25$

    $h = -16(t - 1.25)^2 + 28$

    about 1.25 sec; 28 ft

    c. $8 = -16(t - 1.25)^2 + 28$

    $\frac{-20}{-16} = (t - 1.25)^2$

    $\frac{5}{4} = (t - 1.25)^2$

    $\pm\frac{\sqrt{5}}{2} = t - 1.25$

    $1.25\frac{\sqrt{5}}{2} = t$

    about 2.37 sec