(1) A22 p. 99-102/ 15, 17, 19, 23, 27, 29, 31, 32, 43, 44, 47, 52, 61, 64

p. 108-110/ 5-14 all, 23, 24

Key

15. $(z-6)^2 = 25$

$\sqrt{\quad} = \sqrt{\quad}$

$z-6 = \pm 5$

$+6 \quad = \quad +6$

(15) $z = 1$ and $z = 11$

17. $4(x-1)^2 + 2 = 10$

$-2 \quad = \quad -2$

$\frac{4(x-1)^2}{4} = \frac{8}{4}$

$(x-1)^2 = 2$

$\sqrt{\quad} = \sqrt{\quad}$

$x - 1 = \pm\sqrt{2}$

$+1 \quad = \quad +1$

(17) $x = 1 \pm \sqrt{2}$

19. $\frac{1}{2}r^2 - 10 = \frac{3}{2}r^2$

$-\frac{1}{2}r^2 \quad = -\frac{1}{2}r^2$

$-10 = r^2$

$\sqrt{\quad} \quad = \sqrt{\quad}$

(19) No real solution = r

(23) $x + 1 = \pm 3$

27. $0 = x^2 + 6x + 9$

9: $3 \cdot 3$; $3 + 3 = 6$

ZPP $0 = (x+3)(x+3)$

$x + 3 = 0$

(27) $x = -3$

29. $x^2 - 8x + 12 = 0$

12: $-6 \cdot -2$; $-6 + (-2) = -8$

$(x-6)(x-2) = 0$

(29) $x = 6$ and $x = 2$

31. $n^2 - 6n = 0$

$-n \quad\quad -n$

$n(n-6) = 0$

(31) $n = 0$ and $n = 6$

32. $a^2 - 49 = 0$

$(a+7)(a-7) = 0$

(32) $a = -7$ and $a = 7$

43. $7(x-4)^2 - 18 = 10$

$+18 \quad = \quad +18$

$\frac{7(x-4)^2}{7} = \frac{28}{7}$

$\sqrt{\quad} = \sqrt{\quad}$

$x - 4 = \pm 2$

(43) $x = 6$ and 2

44. $t^2 + 8t + 16 = 0$

16: $4 \cdot 4$; $4 + 4 = 8$

$(t+4)(t+4) = 0$

(44) $t = -4$

47. $g(x) = x^2 + 6x + 8$

8: $4 \cdot 2$; $4 + 2 = 6$

$0 = (x+4)(x+2)$

(47) $x = -4$ and $x = -2$

52. $f(x) = 4x^2 - 12x + 9$

$-6 \quad\quad -6$

36: $-6 \cdot -6$; $-6 + (-6) = -12$

$4x^2 - 6x - 6x + 9$

$2x \quad\quad -3$

$2x(2x-3) - 3(2x-3)$

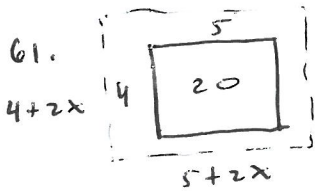
$(2x-3)$

$(2x-3)(2x-3) = 0$

$2x = 3$

(52) $x = \frac{3}{2}$

61.



$(4+2x)(5+2x) = 30$

$20 + 8x + 10x + 4x^2 = 30$

$-30 \quad\quad = -30$

$\frac{4x^2 + 18x - 10}{2} = \frac{0}{2}$

$2x^2 + 9x - 5 = 0$

$x = \frac{-9 \pm \sqrt{81 - 4(2)(-5)}}{4}$

$x = \frac{-9 \pm 11}{4}$

$x = -5$ and $\frac{1}{2}$ ft

(61) $x = \frac{1}{2}$ ft

*64. $x(x+2) = 143$

$-143 \quad = -143$

$x^2 + 2x - 143 = 0$

-143: $-11 \cdot 13$; $-11 + 13 = 2$

$(x-11)(x+13) = 0$

(64) $x = 11$ and $x = -13$

(A22)

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5. $\sqrt{-36}$

$\sqrt{36}\sqrt{-1}$

(5) $6i$

6. $\sqrt{-64}$

(6) $8i$

7. $\sqrt{-18}$

(7) $3i\sqrt{2}$

8. $\sqrt{-24}$

(8) $2i\sqrt{6}$

9. $2\sqrt{-16}$

$8i$

10. $-3\sqrt{-49}$

(10) $-21i$

11. $-4\sqrt{-32}$

(11) $-16i\sqrt{2}$

12. $6\sqrt{-63}$

(12) $18i\sqrt{7}$

13. $4x+2i = 8+yi$

$\frac{4x}{4} = \frac{8}{4}$ $\quad \frac{2i}{i} = \frac{yi}{i}$

(13) $x = 2 \quad 2 = y$

14. $3x+6i = 27+yi$

$\frac{3x}{3} = \frac{27}{3}$ $\quad \frac{6i}{i} = \frac{yi}{i}$

(14) $x = 9 \quad 6 = y$

23. $(12+4i)-(3-7i)$

$12+4i-3+7i$

(23) $9+11i$

24. $(2-15i)-(4+5i)$

$2-15i-4-5i$

$-2-20i$