Name _____ Date _____

1. Expand: $2a(-3a+4)$

   a) $-a^2+8a$ b) $-6a+4$ c) $6a^2+2$ d) $-6a^2+8a$ e) $-a^2+8$

2. Expand: $5a(-7a+3)$

   a) $-2a^2+15a$ b) $-35a+3$ c) $-6a+8$ d) $35a^2+15a$ e) $-35a^2+15a$

3. Expand: $4b(-7b-4)$

   a) $-3b^2-8b$ b) $-28b-4$ c) $28b^2+b$ d) $-28b^2+16b$ e) $-28b^2-16b$

4. Expand: $5a(-7a-2)$

   a) $-35a^2-10a$ b) $-35a^2+10a$ c) $-2a-10a$ d) $-2a^2+3a$ e) $35a^2+10a$

5. Expand then simplify: $-4(x-6)+2$

   a) $-4x+26$ b) $4x-26$ c) $-4x-26$ d) $-4x-4$ e) $-4x-20$

6. Expand then simplify: $3(x+6)-4(x+5)$

   a) $-x-2$ b) $x-2$ c) $7x-2$ d) $7x+2$ e) $-x+23$

7. Expand then simplify: $7(x+5)-5(x+8)$

   a) $-2x-5$ b) $7x+43$ c) $2x-5$ d) $-2x+75$ e) $-2x-75$

8. Expand then simplify: $3(x+9)-3(x+6)$

   a) -9 b) 9 c) $6x+45$ d) $-6x+6$ e) $6x+15$

9. Factor: $25x+10x^2$

   a) $5x(5-2x)$ b) $25(x+5x^2)$ c) $10x(x+25)$ d) $10x(25-x)$ e) $5x(5+2x)$

10. Factor: $55a+11a^2$

    a) $11a(5-a)$ b) $55a(11+a)$ c) $55(a+11a^2)$ d) $11a(5+a)$ e) $5a(11+a)$

11. Factor: $2x^2+6x+4$

    a) $2(x^2+3x+2)$ b) $2(x^2+6x+4)$ c) $2(x^2+3x+4)$ d) $2(x^2+6x+2)$ e) $(x+2)(x+1)$

12. Factor: $4b^2-2b+8$

    a) $4(b^2-b+1)$ b) $2(2b^2+b-4)$ c) $2(b-1)(b+4)$ d) $2(2b^2-b+4)$ e) $4(b-1)(b-1)$

13. Factor: $27c^3+3c^2-c$

    a) $3c(9c^2-c-1)$ b) $-c(27c^2+3c+1)$ c) $c(27c^2-3c+1)$

    d) $c(27c^2+3c-1)$ e) $c(27c^2+3c+1)$

14. Factor: $5c^3 + 10c^2 + 15c$

a) $c(5c^2 - 10c + 15)$ b) $5c(c^2 + 2c + 3)$ c) $5(c^3 + 2c^2 + 3c)$

d) $5c(c^2 + 10c + 15)$ e) $c(5c^2 + 2c + 15)$

15. Factor: $-3a^3 + 9a^2 - 3a$

a) $-3a(a^2 - 3a + 1)$ b) $3a^2(a + 3a - 3a)$ c) $3a^3(a^2 + 3a - 1)$

d) $a^2(a^2 + 3a - 1)$ e) $3a(a^2 - 3a + 1)$

16. Factor: $-6a^3 + 12a^2 - 4a$

a) $3a(2a^2 + 4a - a)$ b) $-2a(3a^2 - 6a + 2)$ c) $2a(3a^2 - 6a + 2)$

d) $2a(3a^2 + 6a - 2)$ e) $-2a(3a - 1)(a + 2)$

17. Factor: $-42xy^2 - 35x^2y$

a) $-6xy(7y + 5x)$ b) $7xy(6y + 5x)$ c) $-7xy(6y + 5x)$ d) $-7xy(6y - 5x)$ e) $-6xy(7y - 5x)$

18. Factor: $-44xy^2 - 11x^2y$

a) $-11xy(4y - x)$ b) $11xy(y + 4x)$ c) $-4xy(11y - 11x)$

d) $-11xy(4y + x)$ e) $-2xy(22y + 11x)$

19. Factor: $-56xy^2 - 16x^2y$

a) $-8xy(7y + 2x)$ b) $-8xy(7y - 2x)$ c) $8xy(7y + 2x)$ d) $8xy(7y - 2x)$ e) $-6xy(7y - 5x)$

20. Factor: $-63xy^2 - 3x^2y$

a) $3xy(21y - x)$ b) $3xy(21y + x)$ c) $-63xy(y - 3x)$ d) $-3xy(21y + x)$ e) $63xy(y - 3x)$

21. Factor: $3x^2y - 9xy^2$

a) $-3xy(x - 3y)$ b) $3xy(x - 3y)$ c) $3xy(x + 3y)$ d) $3x(y + x + 3y)$ e) $3y(x - 3y)$

22. Factor: $7x^2y - 28xy^2$

a) $-7xy(x - 4y)$ b) $7xy(x + 4y)$ c) $7x(y + x + 4y)$ d) $7xy(x - 4y)$ e) $7y(x - 4y)$

23. Factor: $30m^3n - 18m^2n^3$

a) $-6m^2n(5m - 3n^2)$ b) $6m^2n(5m - 3n^2)$ c) $6mn(5m + 3n^2)$

d) $6m^2(2m - n^2)$ e) $30m^2(m - n^2)$

24. Factor: $4x^2y - 24xy + 8xy^2$

a) $4xy(x - 6 + 2y)$ b) $-4xy(x - 6 + 2y)$ c) $4xy(x + 6 - 2y)$

d) $4xy(x + 6 + 2y)$ e) $4x(xy - 6y + 2x)$

25. Factor: $6x^2y - 24xy + 12xy^2$

a) $-6xy(x - 4 + 2y)$ b) $6xy(x - 4 + 2y)$ c) $6xy(x + 4 - 2y)$

d) $6xy(x + 4 + 2y)$ e) $6x(xy - 4y + 2x)$

26. Factor: $5w(x+w)-12(w+x)$

a) $(5w+12)(x-w)$ b) $(5w-12)(x-w)$ c) $(5w-12)(x+w)$
d) $(5w-12)(x+w)(w+x)$ e) $7w(x+w)$

27. Factor: $3y(z+y)-20(y+z)$

a) $(3y-20)(z+y)$ b) $(3y+20)(z-y)$ c) $(3y-20)(z-y)$
d) $(3y-20)(z+y)(y+z)$ e) $-17y(y+z)$

28. Factor: $7w(x-1)-10(1-x)$

a) $(7w+10)(x+1)$ b) $(7w+10)(x-1)$ c) $(7w-10)(x-1)$
d) $(7w-10)(x-1)(1-x)$ e) $(x-1)(7w-10)$

29. Factor: $5a(b-a)-3(a-b)$

a) $(5a+3)(b-a)$ b) $(5a-3)(b-a)$ c) $(5a-3)(b-a)(a-b)$
d) $(5a-3)(b+a)$ e) $2a(b-a)(a-b)$

30. Factor: $3m(a-b)-5n(a-b)-6(a-b)$

a) $(3m-5n-6)(a-b)$ b) $(a-b)^3(2m-5n-7)$ c) $(3m+5n+6)(a+b)$
d) $(a-b)(3m-5n)$ e) $(3m-5n-6)(a^3-b^3)$

31. Factor: $m(a-b)-5n(a-b)-7(a-b)$

a) $(a-b)^3(m-5n-7)$ b) $(m+5n+7)(a+b)$ c) $(a-b)(m-5n)$
d) $(m-5n-7)(a-b)$ e) $(m-5n-7)(a^3-b^3)$

32. Factor: $4m(a-b)-9n(a-b)-8(a-b)$

a) $(a-b)^3(4m-9n-8)$ b) $(4m-9n-8)(a-b)$ c) $(4m+9n+8)(a+b)$
d) $(a-b)(9m-8)$ e) $(4m-9n-8)(a^3-b^3)$

33. Factor: $8m(a-b)-12n(a-b)-13(a-b)$

a) $(a-b)^3(8m-12n-13)$ b) $(8m+12n+13)(a+b)$ c) $(a-b)(8m-12n)$
d) $(8m-12n-13)(a^3-b^3)$ e) $(8m-12n-13)(a-b)$

34. Factor: $3x^2-6xy-4x+8y$

a) $(3x+4)(x+2y)$ b) $(3x+2)(2x-4y)$ c) $(3x-4)(x+2y)$
d) $(3x-4)(x-2y)$ e) $(3x-2y)(x-y)$

35. Factor: $5x^2-20xy-2x+8y$

a) $(5x-2)(x-4y)$ b) $(5x+3)(x+4y)$ c) $(5x-4)(x-2)$ d) $(5x-2)(x+4y)$ e) $(5x-2y)(x-4)$

36. Factor: $c^2 + 2c + cd + 2d$

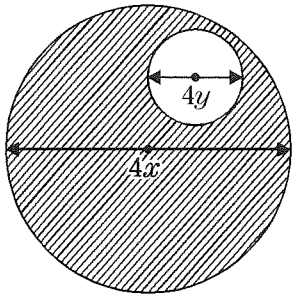
a) $(c+d)(c+2)$ b) $(c-d)(c-2)$ c) $(c-d)(c+2)$
d) $(cd+d)(d-2)$ e) $c(c+2)+d(c+2)$

37. Factor: $a^2 + 7a + ab + 7b$

a) $(a-b)(a-7)$ b) $(a+b)(a+7)$ c) $(a-b)(a+7)$
d) $(ab+b)(b-7)$ e) $a(a+7)+b(a+7)$

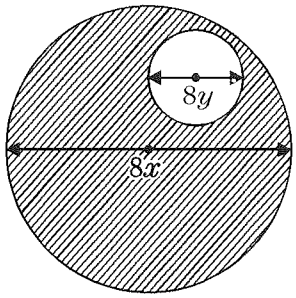
38. Determine an expression for the area of the shaded region in the diagram.

a) $4\pi(x+y)(y-x)$ b) $4\pi(x-y)(x-y)$ c) $2\pi(x+y)(x-y)$
d) $4\pi(x-y)(x+y)$ e) $2\pi(x+y)(y-x)$



39. Determine an expression for the area of the shaded region in the diagram.

a) $16\pi(x+y)(y-x)$ b) $16\pi(x-y)(x-y)$ c) $16\pi(x+y)(x-y)$
d) $4\pi(x+y)(x-y)$ e) $4\pi(x+y)(y-x)$



40. Expand the binomial product: $(4-4a)(3+a)$

a) $4a^2+8a+12$ b) $-4a^2-8a+12$ c) $4a^2-8a+12$ d) $4a^2+9a-12$ e) $7-3a$

41. Expand the binomial product: $(6-6c)(2+c)$

a) $-6c^2-6c+12$ b) $6c^2-6c+12$ c) $6-3c$ d) $6c^2+6c-6$ e) $4-5c$

42. Find the product: $(7-3a)(2-a)$

a) $-3a^2-13a+14$ b) $14+3a^2$ c) $3a^2-13a+14$ d) $3a^2+13a-14$ e) $3a^2-13a-14$

43. Find the product: $(9-3x)(4-x)$

a) $3x^2-21x+36$ b) $36+3x^2$ c) $3x^2+3x+36$ d) $-3x^2+21x+36$ e) $3x^2-3x+36$

44. Expand: $(c-3)^2$

a) c^2+6c+9 b) c^2+6c-9 c) c^2+9 d) c^2-9 e) c^2-6c+9

45. Expand: $(n-2)^2$

a) n^2+4n+4 b) n^2+4n-4 c) n^2+4 d) n^2-4n+4 e) n^2-4

46. Expand: $(c-7)^2$

a) $c^2-14c+49$ b) $c^2+14c+49$ c) $c^2+14c-49$ d) c^2+49 e) c^2-49

47. Expand: $(2t+5)^2$

a) $4t^2+20t-25$ b) $4t^2+25$ c) $4t^2-20t+25$ d) $2t^2+25$ e) $4t^2+20t+25$

48. Expand: $(4a+7)^2$

a) $16a^2+56a-49$ b) $16a^2+49$ c) $16a^2+56a+49$ d) $16a^2-56a+49$ e) $4a^2+49$

49. Expand: $(5t-8)^2$

a) $25t^2+80t+64$ b) $25t^2+80t-64$ c) $25t^2+64$ d) $25t^2-80t+64$ e) $5t^2+64$

50. Expand: $(9d-4)^2$

a) $81d^2-72d+16$ b) $81d^2+72d-16$ c) $81d^2+16$ d) $81d^2+72d+16$ e) $81d^2+16$

51. Determine the product: $(5t-2)^2$

a) $25t^2-20t+4$ b) $25t^2-20t-4$ c) $25t^2+4$ d) $25t^2+20t-4$ e) $5t^2+10t+4$

52. Determine the product: $(7b-5)^2$

a) $49b^2-70b-25$ b) $49b^2-70b+25$ c) $49b^2+25$ d) $49b^2+70b-25$ e) $49b^2+35b+25$

53. In the expansion of $(3x-8y)^2$ the coefficient of the xy term is:

a) -64 b) -48 c) -16 d) 48 e) 64

54. In the expansion of $(7x-6y)^2$ the coefficient of the xy term is:

a) -84 b) -36 c) -26 d) 26 e) 36

55. Determine the product: $(5g+h)(3g+h)$

a) $15g^2-8gh+h^2$ b) $8g^2-8gh-h^2$ c) $15g^2+8gh+h^2$ d) $15g^2-8gh-h^2$ e) $15g^2+8gh-h^2$

56. Determine the product: $(9g+h)(3g+h)$

a) $12g^2+12gh+h^2$ b) $27g^2+12gh+h^2$ c) $9g^2-5gh-h^2$

d) $27g^2-12gh-h^2$ e) $12g^2+12gh-h^2$

57. Determine the product: $(7x-y)(4x+5y)$

a) $28x^2+31xy-5y^2$ b) $28x^2-31xy-5y^2$ c) $28x^2+31xy+5y^2$

d) $28x^2-25y^2$ e) $11x+4y$

58. Determine the product: $(3x - y)(2x + 3y)$

a) $6x^2 - 7xy - 3y^2$ b) $6x^2 + 7xy + 3y^2$ c) $6x^2 + 7xy - 3y^2$ d) $6x^2 - 9y^2$ e) $5x + 2y$

59. Determine the product: $(6x - y)(x - 8y)$

a) $6x^2 - 49xy - 8y^2$ b) $6x^2 + 47xy + 8y^2$ c) $6x^2 + 8y^2$

d) $6x^2 - 49xy + 8y^2$ e) $7x - 9y$

60. Determine the product: $(8x - y)(5x - 7y)$

a) $40x^2 - 61xy + 7y^2$ b) $40x^2 + 61xy - 7y^2$ c) $40x^2 - 7y^2$

d) $40x^2 - 61xy - 15y^2$ e) $40x - 7y$

61. Simplify: $(2x - 1)(x + 2) + (x - 1)(3x - 1)$.

a) $-5x^2 - x - 1$ b) $5x^2 + x - 1$ c) $5x^2 - 1$ d) $5x^2 - x + 1$ e) $5x^2 - x - 1$

62. Simplify: $(4x - 1)(x + 1) - (2x - 1)(x + 1)$.

a) $2x^2 + 2x + 2$ b) $2x^2 + 2x - 2$ c) $2x^2 + 2x$ d) $4x^2 + 2x$ e) $2x^2 + 4x$

63. Expand: $(x - 1)(2x^2 - 3x + 4)$

a) $2x^3 + 5x^2 + x - 4$ b) $2x^3 - x^2 - 7x - 4$ c) $2x^3 + 5x^2 + x - 4$

d) $2x^3 - 5x^2 + 7x + 4$ e) $2x^3 - 5x^2 + 7x - 4$

64. Expand: $(x - 4)(3x^2 - 7x + 1)$

a) $3x^3 + 19x^2 + 29x - 4$ b) $3x^3 - 19x^2 + 29x - 4$ c) $3x^3 + 5x - 29x - 4$

d) $3x^3 + 19x - 27x - 4$ e) $3x^2 - 5x^2 + 29x - 4$

65. Expand: $(x - 2y)^3$

a) $x^3 - 6x^2y + 12xy^2 - 8y^3$ b) $x^3 + 6xy^2 - 12x^2y - 8y^3$ c) $x^3 + 8y^3$

d) $3x - 6y$ e) $x^3 + 6x^2y - 8y^3$

66. Expand: $(s - 5t)^3$

a) $s^3 - 5st^2 - 75s^2t - 125t^3$ b) $s^3 - 125t^3$ c) $s^3 - 15s^2t + 75st^2 - 125t^3$

d) $3s - 15t$ e) $s^3 - 15s^2t + 75st^2 - 125t$

67. Expand and simplify: $(x - 7)(x + 2)(3x - 4)$

a) $3x^3 + 19x^2 - 22x + 56$ b) $3x^3 - 19x^2 - 22x + 56$ c) $3x^3 - 19x^2 + 22x + 56$

d) $3x^3 + 19x^2 + 22x + 56$ e) $3x^3 + 56$

68. Expand and simplify: $(x - 2)(4x - 3)^2$

a) $16x^3 - 56x^2 - 57x - 18$ b) $16x^3 + 56x^2 + 57x + 18$ c) $16x^3 + 56x^2 - 57x + 18$

d) $16x^3 - 56x^2 + 57x - 18$ e) $16x^2 - 16$

69. Expand and simplify: $(x-1)(2x-3)^2$

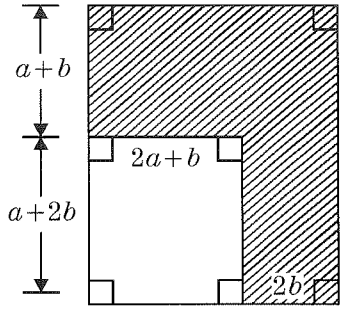
a) $4x^3-16x^2-21x-9$ b) $4x^3+16x^2+21x+9$ c) $8x^3-16x^2+21x-9$

d) $4x^2-9$ e) $4x^3-16x^2+21x-9$

70. What is the area of the shaded region shown in the diagram?

a) $4a^2+18ab-11b^2$ b) $2a^2+9ab+7b^2$ c) $2a^2+7ab+7b^2$

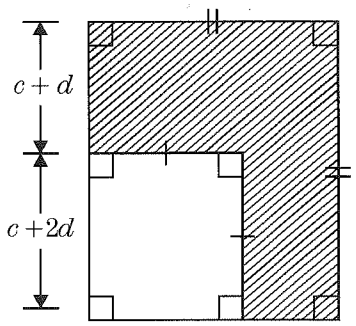
d) $4a^2-9ab-7b^2$ e) cannot be done



71. What is the area of the shaded region shown in the diagram?

a) $3c^2+9cd-5d^2$ b) $3c^2+8cd+5d^2$ c) $3c^2+9cd+5d^2$

d) $4c^2-9cd-7d^2$ e) cannot be done



72. Which of the following is a factor of $a^2+7a+10$?

a) $a+2$ b) $a-2$ c) $a+10$ d) $a+7$ e) $a+9$

73. Which of the following is a factor of $a^2+11a+28$?

a) $a+2$ b) $a+11$ c) $a+7$ d) $a+14$ e) $a+28$

74. Factor: x^2-6x+8

a) $(x+2)(x+4)$ b) $(x-6)(x+2)$ c) $(x-2)(x-4)$ d) $(x-3)(x-3)$ e) $(x-8)(x-1)$

75. Factor: $x^2-9x+20$

a) $(x-4)(x-5)$ b) $(x+4)(x+5)$ c) $(x-10)(x-2)$ d) $(x+10)(x+2)$ e) $(x-9)(x-1)$

76. Factor: $n^2-3n-28$

a) $(n-7)(n-4)$ b) $(n+7)(n-4)$ c) $(n-14)(n+2)$ d) $(n-7)(n+4)$ e) $(n-14)(n-2)$

77. Factor: $n^2-5n-24$

a) $(n-8)(n-3)$ b) $(n+8)(n-3)$ c) $(n-8)(n+3)$ d) $(n-6)(n+4)$ e) $(n-12)(n-2)$

78. Factor: $c^4 + 11c^2 - 60$

a) $(c-2)^2(c^2-15)$ b) $(c+2)(c-2)(c^2+15)$ c) $(c^2-20)(c^2+3)$
d) $(c^2-3)(c^2+20)$ e) $(c^2-15)(c^2+3)$

79. Factor: $c^4 - 21c^2 - 100$

a) $(c-5)^2(c^2-4)$ b) $(c^2+5)(c^2-4)$ c) $(c^2-5)(c^2+20)$
d) $(c+5)(c-5)(c^2+4)$ e) $(c^2-25)(c^2+5)$

80. Factor: $2a^2 + 2a - 24$

a) $(2a-6)(a+4)$ b) $(2a+6)(a-4)$ c) $2(a+3)(a-4)$ d) $2(a^2+a-12)$ e) $2(a-3)(a+4)$

81. Factor: $5z^2 + 10z - 120$

a) $(5z-6)(z+4)$ b) $(z+60)(5-4)$ c) $5(z+4)(z-6)$ d) $5(z-4)(z+6)$ e) $5(z^2+2z-24)$

82. Factor: $5a^2 - 5a - 100$

a) $(5a-25)(a+4)$ b) $(5a+25)(a-4)$ c) $5(a+5)(a-4)$ d) $5(a-5)(a+4)$ e) $5(a^2-a-20)$

83. Factor: $-2d^2 - 2d + 24$

a) $(2d-6)(d+4)$ b) $(2d+6)(d-4)$ c) $-2(d-3)(d+4)$ d) $-2(d+3)(d-4)$ e) $-2(d^2-d+12)$

84. Which of the following is a factor of $2ax^2 - 17ax + 21a$, when *completely* factored.

a) $x+7$ b) $2ax-7a$ c) $-ax+3a$ d) $x-7$ e) $x-3$

85. Which of the following is a factor of $3kx^2 - 42kx + 144k$, when *completely* factored?

a) k b) $x-8$ c) $3kx-8k$ d) $3kx-18k$ e) $x+6$

86. Factor: $5c^2d - 30cd^2 + 40d^3$

a) $5d(c^2-6cd+8d^2)$ b) $(5dc-10d^2)(c-4d)$ c) $(5c-20d)(c-2d)$
d) $5d(c+2d)(c-4d)$ e) $5d(c-2d)(c-4d)$

87. Factor: $4c^2d - 16cd^2 + 12d^3$

a) $4d(c-d)(c-3d)$ b) $4d(c^2-4cd+3d^2)$ c) $(4dc-4d^2)(c-3d)$
d) $(4c-12d)(c-d)$ e) $4d(d-c)(c-3d)$

88. For what integral value(s) of k can the trinomial $n^2 + kn + 12$ be factored?

a) ± 3 b) ± 4 c) ± 5 d) ± 6 e) ± 7

89. For what integral value(s) of k can the trinomial $n^2 + kn + 9$ be factored?

a) ± 4 b) ± 5 c) ± 6 d) ± 7 e) ± 8

90. For what integral value(s) of k can the trinomial $x^2 + 5x + k$ be factored?

a) 4 b) 5 c) 7 d) 9 e) 10

91. For what integral value(s) of k can the trinomial $x^2 + 7x + k$ be factored?

a) 7 b) 10 c) 14 d) 28 e) 49

92. For what integral value(s) of k can the trinomial $x^2 - 5x + k$ be factored?

a) -4 b) -5 c) -6 d) 5 e) ± 6

93. For what integral value(s) of k can the trinomial $x^2 - 10x + k$ be factored?

a) -25 b) 11 c) ± 24 d) 24 e) 100

94. Find all values of k for which $x^2 + kx - 16$ can be factored?

a) ± 4, 0 b) 0, ± 6, ± 15 c) ± 6 d) ± 2, ± 6 e) 0

95. Find all values of k for which $x^2 + kx - 25$ can be factored?

a) ± 5, 0 b) ± 24 c) 0, ± 24 d) 0, ± 10 e) -10

96. For which of the following are the possible values of k infinite, in order to make the trinomial factorable?

I. $x^2 - x + k$ II. $kx^2 + 9x + 2$ III. $x^2 + kx + 6$ IV. $kx^2 + 18x + k$

a) I b) II c) III d) IV e) I and IV

97. For which of the following are the possible values of k infinite, in order to make the trinomial factorable?

I. $kx^2 - 7x + 5$ II. $x^2 - 2 + k$ III. $x^2 + kx + 36$ IV. $kx^2 - k$

a) I b) II c) III d) IV e) II and IV

98. Factor: $2h^2 + 7h + 6$

a) $(2h + 3)(h + 2)$ b) $(2h - 3)(h - 2)$ c) $(3 - 2h)(h - 2)$ d) $(2h - 3)(h + 2)$ e) $(2h + 2)(h + 3)$

99. Factor: $2k^2 + 8k + 8$

a) $2(k + 2)^2$ b) $(2k - 4)(k - 2)$ c) $(2 - 2k)(k - 4)$ d) $(2k - 4)(k + 2)$ e) $2(k - 2)(k + 2)$

100. Factor: $3p^2 - 10p + 3$

a) $(3p + 1)(p + 3)$ b) $(3p - 1)(p - 3)$ c) $(3p - 3)(p - 1)$ d) $3(p - 1)^2$ e) $(3p + 1)(p - 3)$

101. Factor: $3p^2 - 19p + 20$

a) $(3p - 4)(p + 5)$ b) $(3p - 5)(p - 4)$ c) $3(p - 5)(p - 4)$ d) $(3p - 4)(p - 5)$ e) $(3p + 5)(p - 4)$

102. Factor: $3m^2 - 30m + 75$

a) $(3m - 15)(m - 5)$ b) $-3(m - 5)^2$ c) $3(m - 5)^2$
d) $(3m - 25)(m - 3)$ e) $3(m + 5)(m - 5)$

103. Factor: $4m^2 - 38m + 70$

a) $2(2m+5)(m-7)$ b) $(4m-7)(m-10)$ c) $(2m-35)(m-2)$
d) $2(m-7)(2m-5)$ e) $2(m-1)(m-35)$

104. Which of the following is a factor of $2x^2 - 18x + 16$, when *completely* factored?

a) $2x+2$ b) $x-8$ c) $x+1$ d) $2x-16$ e) $x-2$

105. Which of the following is a factor of $60 + 3x - 3x^2$, when *completely* factored?

a) $3x-4$ b) $5-x$ c) $x+5$ d) $15-3x$ e) $x-4$

106. Factor: $3t^2 + 14t - 5$

a) $(3t+1)(t-5)$ b) $(3t-1)(t+5)$ c) $(3t-7)(t+2)$ d) $(3t-1)(t-5)$ e) $(3t+5)(t-1)$

107. Factor: $4t^2 + 5t - 6$

a) $(4t-3)(t-2)$ b) $(2t-3)(2t+2)$ c) $2(2t-3)(t+1)$ d) $(4t+3)(t-2)$ e) $(4t-3)(t+2)$

108. Factor: $6x^2 - 5x - 6$

a) $(2x+3)(3x-2)$ b) $(2x-3)(3x+2)$ c) $2(x-1)(3x+2)$ d) $(x-6)(6x+1)$ e) $(2x-3)(3x-2)$

109. Factor: $5x^2 - 32x - 21$

a) $(5x-3)(x+7)$ b) $5(x-1)(x+20)$ c) $(5x+3)(x-7)$ d) $(x-7)(5x+1)$ e) $(x-3)(5x+7)$

110. Factor: $6x^2 - 41x - 7$

a) $6(x-1)^2$ b) $(6x+7)(x-1)$ c) $(x-1)(6x-7)$ d) $(x-7)(6x-1)$ e) $(x-7)(6x+1)$

111. Factor: $8x^2 - 13x - 6$

a) $(8x+3)(x-2)$ b) $(2x+3)(4x-2)$ c) $4(2x-1)(x+2)$ d) $(x-3)(8x-2)$ e) $2(x-3)(4x-1)$

112. Factor: $15x^2 + 17xy - 4y^2$

a) $(5x-y)(3x+4y)$ b) $(5x+y)(3x-4y)$ c) $(5x-4y)(3x+y)$
d) $(15x-4y)(x+y)$ e) $(15x+4y)(x-y)$

113. Factor: $15x^2 - xy - 6y^2$

a) $(5x-3y)(3x+2y)$ b) $(5x+3y)(3x-2y)$ c) $(5x-6y)(3x+y)$
d) $(15x-6y)(x+y)$ e) $(15x+6y)(x-y)$

114. Factor: $35x^2 + 13xy - 12y^2$

a) $(5x+3y)(7x-4y)$ b) $(5x-12y)(7x+y)$ c) $(35x-12y)(x+y)$
d) $(35x+12y)(x-y)$ e) $(5x+4y)(7x-3y)$

115. Factor: $30x^2 + 7xy - 2y^2$

a) $(6x + y)(5x - 2y)$ b) $(6x - y)(5x + 2y)$ c) $(6x - 2y)(5x + y)$
d) $(15x - 2y)(2x + y)$ e) $(2x + y)(15x - 2y)$

116. For which integral value(s) of h can $9x^2 + hx + 4$ be factored?

a) ± 36 b) ± 14 c) ± 12 d) -6 e) 6

117. For which integral value of h can $49x^2 + hx + 4$ be factored?

a) -34 b) -35 c) -36 d) -37 e) -38

118. Factor: $x^2 - 64$

a) $(x + 8)(x - 8)$ b) $(x - 8)(x - 8)$ c) $(x + 8)(x + 8)$ d) $(x + 32)(x - 32)$ e) $64(\frac{1}{64}x^2 - 1)$

119. Factor: $x^2 - 81$

a) $(x - 9)(-x + 9)$ b) $(x + 9)(x - 9)$ c) $(x + 9)(-x + 9)$
d) $(x + 9)(x - 3)(x + 3)$ e) $9(\frac{1}{9}x^2 - 1)$

120. Factor: $49b^2 - 25$

a) $(7b + 5)(7b - 5)$ b) $(7b - 5)^2$ c) $(7b - 5)(-7b + 5)$
d) $7(7b^2 - 25)$ e) $(49b + 5)(b - 5)$

121. Factor: $25m^2 - 16$

a) $(5m - 4)^2$ b) $(5m - 4)(-5m + 4)$ c) $5(5m^2 - 16)$
d) $(25m + 4)(m - 4)$ e) $(5m + 4)(5m - 4)$

122. Factor: $81b^2 - 36$

a) $9(3b + 2)(3b - 2)$ b) $(9b - 6)^2$ c) $3(9b - 3)(-9b + 3)$
d) $3(27b^2 - 12)$ e) $(9b + 6)(9b - 6)$

123. Factor: $50c^2 - 18$

a) $2(5c - 3)(-5c + 3)$ b) $2(5c^2 - 9)$ c) $(25c + 9)(c - 2)$
d) $2(5c + 3)(5c - 3)$ e) cannot be factored

124. Factor: $(3x + y)^2 - 9$

a) $(3x - y + 3)(3x + y - 3)$ b) $(3x + y + 3)(3x + y - 3)$ c) $(3x - y + 3)(3x - y - 3)$
d) $(3x + y - 3)^2$ e) $(3x + y + 3)(3x - y - 3)$

125. Factor: $(3a + 2b)^2 - 16$

a) $(3a + 2b + 4)(3a + 2b - 4)$ b) $(3a - 2b + 4)(3a + 2b - 4)$ c) $(3a - 2b + 4)(3a - 2b - 4)$
d) $(3a + 2b - 4)^2$ e) $(3a + 2b + 4)(3a - 2b - 4)$

126. Factor: $(2a+5b)^2-16c^2$

a) $(2a+5b+4c)(2a+5b-4c)$ b) $(2a-5b+4c)(2a+5b-4c)$ c) $(2a-5b+4c)(2a-5b-4c)$

d) $(2a+5b-4c)^2$ e) $(2a+5b+4c)(2a-5b-4c)$

127. Factor: $(2x-3)^2-(3x+2)^2$

a) $(5x-1)(x+5)$ b) $(5x-1)(x-5)$ c) $(5x-1)(-x+5)$

d) $(5x+1)(x-5)$ e) $(5x-1)(-x-5)$

128. Factor: $(3x-4)^2-(x+3)^2$

a) $(4x-1)(7-2x)$ b) $(4x-7)(2x-1)$ c) $(4x-1)(2x-7)$ d) $(3x-1)(2x-7)$ e) $(3x-1)(x-7)$

129. Factor: $(5x-6)^2-(4x-3)^2$

a) $9(x-1)(x-3)$ b) $(x-9)(x-3)$ c) $3(x-1)(x-3)$ d) $(2x-6)(x-9)$ e) $9(x-1)^2$

130. Factor: y^4-y^2-72

a) $(y+3)(y-3)(y^2+8)$ b) $(y^2-3)(y^2-8)$ c) $(y+3)(y-3)(y+4)(y-4)$

d) $(y+3)(y-3)(y^2-8)$ e) $(y-3)^2(y+4)^2$

131. Factor: y^4-23y^2-50

a) $(y^2-5)(y^2+2)$ b) $(y+5)(y-5)(y+2)^2$ c) $(y+5)(y-5)(y^2+2)$

d) $(y-5)(y+5)(y+2)(y+1)$ e) $(y-5)^2(y+2)^2$

132. Factor: y^4-5y^2+4

a) $(y^2+1)(y^2-4)$ b) $(y+1)(y-1)(y+2)(y-2)$ c) $(y+1)(y-1)(y^2+4)$

d) $(y+2)(y-2)(y^2+1)$ e) $(y^2-2)(y^2-2)$

133. Factor: y^4-21y^2-100

a) $(y^2+25)(y^2-4)$ b) $(y+2)(y-2)(y^2+25)$ c) $(y+5)(y-5)(y^2+4)$

d) $(y+5)(y-5)(y+2)(y-2)$ e) $(y-25)(y+25)(y^2+4)$

134. Factor if possible: $\frac{x^2}{16}-\frac{y^2}{9}$

a) $\frac{1}{144}(9x+16y)(x-y)$ b) $\frac{1}{144}(9x^2-16y^2)$ c) $\frac{1}{144}(3x+4y)(3x-4y)$

d) $(\frac{x}{4}+\frac{y}{3})(\frac{x}{4}-\frac{y}{3})$ e) not possible

135. Factor if possible: $\frac{x^2}{4}-\frac{y^2}{9}$

a) $\frac{1}{36}(9x+4y)(x-y)$ b) $\frac{1}{36}(9x^2-4y^2)$ c) $(\frac{x}{2}+\frac{y}{3})(\frac{x}{2}-\frac{y}{3})$

d) $\frac{1}{36}(9x+4y)(x-4)$ e) not possible

2/13/2012

Answer List

1. d
2. e
3. e
4. a
5. a
6. a
7. c
8. b
9. e
10. d
11. a
12. d
13. d
14. b
15. a
16. b
17. c
18. d
19. a
20. d
21. b
22. d
23. b
24. a
25. b
26. c
27. a
28. b
29. a
30. a
31. d
32. b
33. e
34. d
35. a
36. a
37. b
38. d
39. c
40. b
41. a
42. c
43. a
44. e
45. d
46. a
47. e
48. c
49. d
50. a
51. a
52. b
53. b
54. a
55. c
56. b
57. a
58. c
59. d
60. a
61. e
62. c
63. e
64. b
65. a
66. c
67. b
68. d
69. e
70. c
71. b
72. a
73. c
74. c
75. a
76. d
77. c
78. b
79. d
80. e
81. d
82. d
83. c
84. d
85. b
86. e
87. a
88. e
89. c
90. a
91. b
92. e
93. c
94. b
95. c
96. a
97. e
98. a
99. a
100. b
101. d
102. c
103. d
104. b
105. b
106. b
107. e
108. b
109. c
110. e
111. a
112. a
113. b
114. e
115. b
116. c
117. b
118. a
119. b
120. a
121. e
122. a
123. d
124. b
125. a
126. a
127. e
128. c
129. a
130. a
131. c
132. b
133. c
134. d
135. c