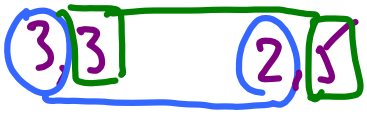
28. $9x^2 + 9xy - 10y^2$

$9x^2$: 1, 9

$-10y^2$: 1, 10



$(3x + 5y)(3x - 2y)$

$+15xy$

$-6xy$

$9x^2 + 9xy - 10y^2$

$-90x^2y^2$: 1, 90; 2, 45; 3, 30; 5, 18; 6, 15

$9x^2 - 6xy + 15xy - 10y^2$

$3x(3x - 2y) + 5y(3x - 2y)$

$(3x - 2y)(3x + 5y)$

32. $6a^2 - 20a + 16$

$2(3a^2 - 10a + 8)$

$2[3a^2 - 4a - 6a + 8]$

$2[a(3a-4) - 2(3a-4)]$

$2(3a-4)(a-2)$

$2(3a^2 - 10a + 8)$

$2(a-2)(3a-4)$

$24a^2$

1, 24

2, 12

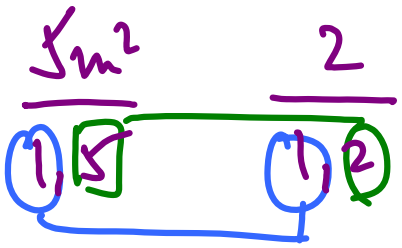
3, 8

4, 6

$3a^2$: 1, 3

8 : 1, 8 ; 2, 4

40. $5m^2 + 11m + 2$



$(m + 2)(5m + 1)$

$5m^2 + 11m + 2$

$10m^2$

$1, 10$

$5m^2 + m + 10m + 2$

$m(5m+1) + 2(5m+1)$

$(5m+1)(m+2)$

46. $3a^2 - 10a + 8$

$24a^2$

$4, 6$

$3a^2 - 4a - 6a + 8$

$a(3a-4) - 2(3a-4)$

$(3a-4)(a-2)$

$3a^2$ $\quad$ 8

$1, 3$ $\quad$ $1, 8$

$2, 4$

$(a-2)(3a-4)$

52. $5p^2 + 13p - 6$

$5p^2$ $\quad$ -6

$1, 5$ $\quad$ $1, 6$

$2, 3$

$(p + 3)(5p - 2)$

$+15p$

$-2p$

$5p^2 + 13p - 6$

$-30p^2$

$1, 30$

$2, 15$

$5p^2 - 2p + 15p - 6$

$p(5p-2) + 3(5p-2)$

$(5p-2)(p+3)$

64. $24x^3 - 20x^2y - 24xy^2$

6.4 Factoring Special Products

Perfect Square Trinomials

8. $y^2 + 6y + 9$

$20r + 25$

42. $x^3 - 1$

20. $4y^2 - 12by + 9b^2$

Difference of Squares

30. $16x^2 - y^2$

34. $25r^8 - 4$

38. $81 - a^2b^2$

Cubes

42. $x^3 - 1$

50. $125m^3n^3 - 64p^3$

p 493

56. $27a^3 + 1000b^3$

58. $u^6 + v^6$

62. $25y^2 - \frac{1}{36}$

66. $ab^3 - a^3b$

72. $16m^5 + 54m^2n^3$

74. $8d^4 - 64c^3d$

6.5 Strategies for Factoring

Four terms (p 499)

56. $x^3 - x^2 - x + 1$

Three terms

20. $ax^2 + 4ax + 4a$

44. $9a^2x + 12ax + 4x$

66. $4m^2 + 20m + 25$

Two terms

64. $9 - 4m^2$

72. $x^3 + a^3$

p 595

12. $12a^3b^2c + 3a^2b^2c^2 + 5abc^3$

18. $2a^2 - 5a - 12$

22. $x^2 + x + 2$

26. $2x^2 - 2y^2$

36. $h^4 + h^3 + h^2$

42. $3w^2 - w - 2$

50. $15u^2 - 2u^2v^2 + 2uv^3$

60. $4x^4 - 4x$

74. $20x^2 + 3xy + 2y^2$

6.6 Solving Quadratic Equations by Factoring

Zero Factor Theorem:
If ab=0, then a=0 or b=0.

6. $(x-7)(x+3)=0$

16. $(m-4)^2=0$

18. $y^2-25=0$

Quadratic Equation

22. $p^2-16p+64=0$

28. $6k^2-7k=-1$

34. $m(m+6)=-9$

p 511

38. Find every number such that triple the square of the number is equal to four times that number.

40. The product of two consecutive natural numbers is 306. Find the numbers.

42. The difference of the squares of two consecutive even natural numbers is 60.

48. The front elevation of one wing of a house is shown. Because of budget constraints, the total area of the front of this wing must be 352 square feet. The height of the triangular portion is 14 feet less than the base. Find the base length.