Sec. 8-4 Multiplying Special Cases

$(a+b)^2 = a^2+2ab+b^2$

$(a+b)(a+b) = a(a+b) + b(a+b)$

$a^2+ab+ab+b^2$

a. $(x+8)^2 = x^2+16x+64$

$8x$

b. $(2m-3)^2 = 4m^2-12m+9$

$-6m$

$(2m-3)(2m-3)$

$2m(2m-3)-3(2m-3)$

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

$4m^2-12m+9$

* $(a^{S}+b)(a^{D}-b) = a^2-b^2$

$a(a-b)+b(a-b)$

$a^2-ab+ab-b^2$

a^2-b^2

a. $(x^{S}+9)(x^{D}-9) = x^2-81$

b. $(3c-4)(3c+4) = 9c^2-16$

c. $(2+m)(2-m) = 4-m^2$

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Sec. 8.5 Factoring x^2+bx+c

ax^2+bx+c $\quad a=1$

Problem 1: Factor

a. $r^2+11r+24$ = $(r+3)(r+8)$

Factor

1·24
2·12
3·8
4·6

Choose the pair that adds up to "b = 11"

$r^2+8r+3r+24$

$11r$

b. $x^2+15x+56 = (x+7)(x+8)$

1·56
2·28
4·14
7·8

c. $y^2-6y+8 = (y-2)(y-4)$

1·8
$-2-4$

d. x^2-x+2 = not factorable / prime

1·2

e. $n^2+9n-36 = (n-3)(n+12)$

small

1·36
2·18
$-3+12=9$
4·9
6·6

f. $c^2-4c-21$ = $(c+3)(c-7)$ $(c-7)(c+3)$

big

1·21
3·7
$3-7=-4$

g. x^2-x-72 → area of a rectangle dimension?

$(x+8)(x-9)$

1·72
2·36
8·9

$x+8$, $x-9$

h. $m^2+6mn-27n^2$

1·27
$-3+9$

$(m-3n)(m+9n)$