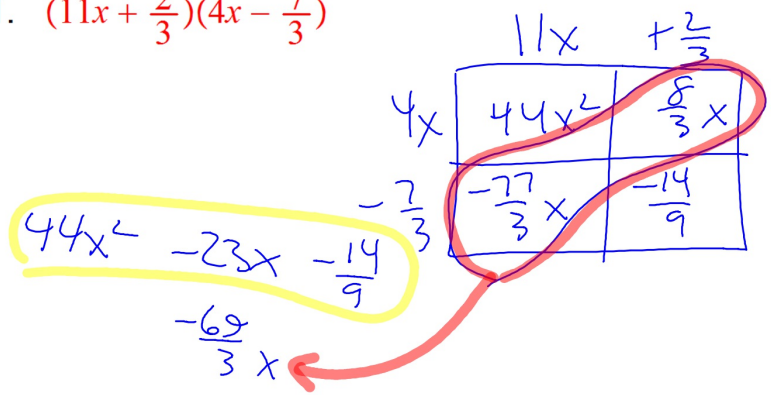
After the hwk quiz do the following:

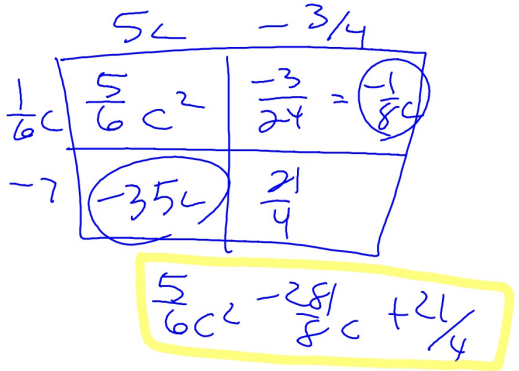
Expand each.

1. $(11x+\frac{2}{3})(4x-\frac{7}{3})$ 2. $(\frac{1}{6}c-7)(5c-\frac{3}{4})$

1. $(11x+\frac{2}{3})(4x-\frac{7}{3})$



2. $(\frac{1}{6}c-7)(5c-\frac{3}{4})$



$\frac{8}{8}\cdot\frac{-35}{1}-\frac{1}{8}$

$-\frac{280}{8}-\frac{1}{8}=-\frac{281}{8}$

Sec 9-4: Expanding Special Cases

Expand each. Notice what happens.

1. $(d + 7)(d - 7)$

$d^2 - 49$

2. $(w - 5)(w + 5)$

$w^2 - 25$

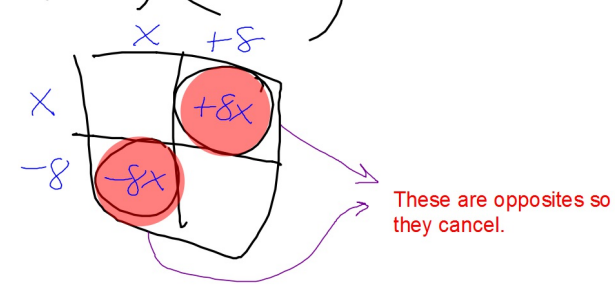
The middle 2 terms cancel

The difference of perfect squares

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

Perfect Squares:
1
4
9
16
25
36
49
64
81
100...

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



These are opposites so they cancel.

Expand each.

1. $(c + 4)(c - 4)$

$c^2 - 16$

2. $(a + 11)(a - 11)$

$a^2 - 121$

Expand each.

1. $(e + 21)(e - 21)$

$e^2 - 441$

2. $(19k - 31)(19k + 31)$

$361k^2 - 961$

Expand.

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

1. $(3g^4 - 5h^2)(3g^4 + 5h^2)$

$(3g^4)^2 - (5h^2)^2$

$9g^8 - 25h^4$

Expand each.

1. $(m + 3)^2$

$(m+3)(m+3)$

$m^2 + 6m + 9$

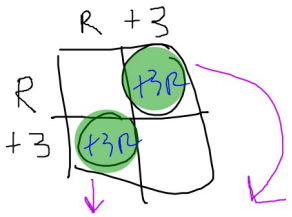
2. $(Q - 9)^2 = (Q-9)(Q-9)$

$Q^2 - 18Q + 81$

What do you notice?

The middle term is twice the constant in the orig. problem & the last term is the square of the constant in the orig. prob.

$(R+3)^2 = (R+3)(R+3)$



These are a same so the final result is two times one of them

What is the shortcut for expanding $(R - 10)^2$

Only works if the coefficient of the variable is 1

$R^2 - 2(10) + (10)^2$

$R^2 - 20R + 100$

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

Expand each.

1. $(G + 5)^2$

$G^2 + 10G + 25$

$2 \cdot 5$

2. $(A - 8)^2$

$A^2 - 16A + 64$

$2(-8)$

Expand.

$(3n + 8)^2$

$9n^2 + 48n + 64$

What is the shortcut to finding the middle term?

$2(3n \bullet 8)$

	3n	+8
3n	$9n^2$	+24n
+8	+24n	+64

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

$(3n + 8)^2$

$a = 3n$ $\quad$ $b = 8$

$(3n)^2 + 2(3n)(8) + (8)^2$

$9n^2 + 48n + 64$

Expand.

1. $(5e - 6)^2$

$25e^2 - 60e + 36$

$2(5e)(-6)$

2. $(2B + 9)^2 = (2B+9)(2B+9)$

$4B^2 + 36B + 81$

$2(2B)(9)$

Expand.

$(3e - 5f)^2$ $\quad$ a $\quad$ b

$2ab = 2(3e)(-5f) = -30ef$

$\frac{9e^2}{(3e)^2} - \frac{30ef}{} + \frac{25f^2}{(-5f)^2}$