Standard Form of a Quadratic:

$ax^2 + bx + c$

a is the coefficient of the quadratic term

b is the coefficient of the linear term

c is the constant

Factoring out GCF first.

You should always look for a GCF before you do any other kind of factoring!

Factor completely.

1. $18b^2 - 3b - 10$

GCF

-180; 12, -15; -3

	$3b$	2
$6b$	$18b^2$	$12b$
-5	$-15b$	-10

$(3b+2)(6b-5)$

Factor completely.

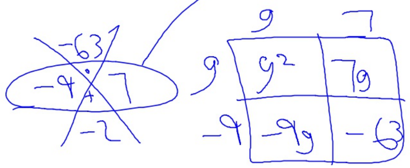
2. $8w^3 - 52w^2 + 84w$

$4w(2w^2 - 13w + 21)$

$4w(2w-7)(w-3)$

Factor completely.

3. $g^2 - 2g - 63$

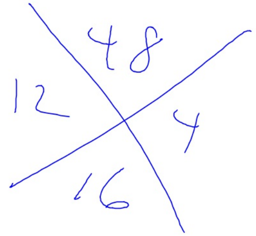


$(g+7)(g-9)$

When factoring a quadratic when a = 1:

The numbers found when filling out the X become the constants inside the factors.

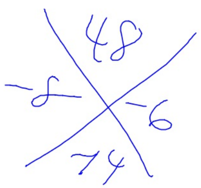
factor: $p^2 + 16p + 48 = (p+12)(p+4)$



factor each:

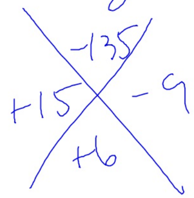
1. $y^2 - 14y + 48$

$(y-8)(y-6)$



2. $y^2 + 6y - 135$

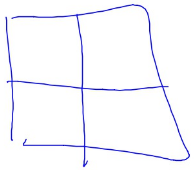
$(y+15)(y-9)$



Factor:

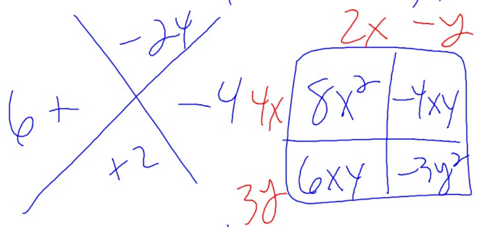
1. $c^2 - 2cd - 8d^2$

$(c-4d)(c+2d)$



2. $8x^2 + 2xy - 3y^2$

$(4x+3y)(2x-y)$



You can now finish hwk #17

Sec 9-6

pages 483-484

Problems 33-36, 45, 46, 53, 57

Factor.

$12x^2 - 20x$

$4x(3x - 5)$

GCF!!!

Always look for GCF first. Sometimes that is all you can do!

expanding

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

Expand each.

1. $(x + 15)(x - 15)$

$x^2 - 225$

2. $(3k - 7)(3k + 7)$

$9k^2 - 49$

expanding

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

factoring

factor

$25x^2 - 64$

$\sqrt{25x^2} =$ $\sqrt{64} =$

$(5x + 8)(5x - 8)$

Sec 9-7: Factoring Special Cases

Factoring the Difference of Perfect Squares:

Perfect Squares:

1
4
9
16
25
36
49
64
81
100

Factor each.

1. $144Q^2 - 25$

$(12Q+5)(12Q-5)$

2. $81c^4 - 100d^2$

$(9c^2+10d)(9c^2-10d)$

3. $98k^2 - 128$

$2(49k^2-64)$

$2(7k+8)(7k-8)$

4. $\frac{1}{9}g^2 - \frac{4}{49}$

$\left(\frac{1}{3}g-\frac{2}{7}\right)\left(\frac{1}{3}g+\frac{2}{7}\right)$

Expand each.

1. $(w-8)^2$

$w^2 - 16w + 64$

2. $(a+5)^2$

$a^2 + 10a + 25$

Factor each.

1. $R^2 + 14R + 49$

$(R+7)^2$

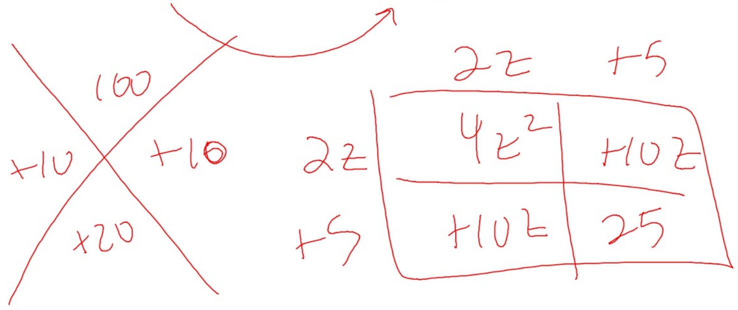
2. $g^2 - 22g + 121$

$(g-11)^2$

121, −11, −11, −22

Factor:

$$4z^2 + 20z + 25 = (2z+5)^2$$



Don't confuse these two: They are NOT the same

$$(h-9)^2 \qquad\qquad h \pm 9$$