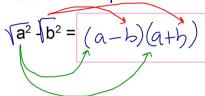
Sec 9-7: Factoring Special Cases:

Factoring the Difference of Perfect Squares:



3.
$$98k^{2} - 128$$

$$2 (49k^{2} - 64)$$

$$- 2 (19k^{2} - 64)$$

$$- 3 (149k^{2} - 64)$$

Factor each.

1.
$$\sqrt{144Q^2} - \sqrt{25}$$
2. $81c^{4} - 100d^{2}$

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

Factor. GCF
$$GCF = 9$$

5. $27w^3 - 75w$
6. $36g^{10} - 9h^8$
 $9(9w^2 - 25)$
 $9(4g^{10} - h^8)$
 $9(2g^5 + h^4)$

Factor.

 $12x^2 - 20x$

GCF 4x(3x - 5)

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

When factoring $ax^2 + bx + c$

If a=1 and c is a perfect square look at b

if b is two times the square root of c...

Factor:

If you don't recognize this pattern you can always factor using the "X" and the "Box"

Expand:

$$(b + 7)^2$$

is just twice the constant.

Factor:

$$e^{2} + 8e + 16$$

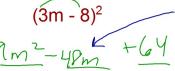
If the last number, c, is a perfect square and the middle term is twice the square root of this number, then it always factors into the same factor twice or (factor)² where the constant inside the factor is the square root of c.

Factor

$$R^2 - 24R + 144$$

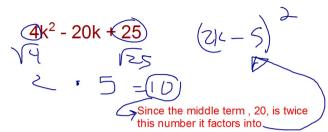
$$W^2 + 25W + 100$$





The middle coefficient is found by multiplying a and c then doubling it. $(3)(-8) = -24 \times 2 = -48$

Factor:



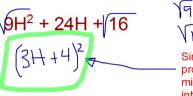
When factoring

$$ax^2 + bx + c$$

If a and c is are both perfect squares look at b

if b is two times the product of the square roots of a and c...

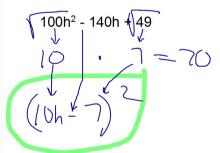
Factor:



 $\sqrt{9} = 3$ $\sqrt{16} = 4$ 3.4 = 12

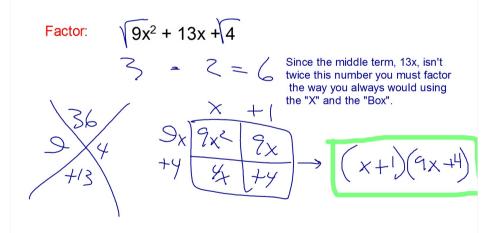
Since you can double this product: (2)(12) to get the middle term of 24 it factors into a perfect square trinomial.

Factor



As long as the middle term, 140, is twice the product of the square roots of a and c then this is a perfect square trinomial.

If you don't notice this you can always factor this like any other trinomial using the "X" and the "Box"



Factor

As long as the middle term, 48, is twice the product of the square roots of a and c then this is a perfect square trinomial.

If you don't notice this you can always factor this like any other trinomial using the "X" and the "Box" You can now finish Hwk #22 Sec 9-7

Pages 493-494

Problems 3, 6, 14, 19, 22, 32, 38, 48, 62