Algebra I
Notes Section 8.6
Factor $ax^2 + bx + c$

Big Ideas

1. How to use the factors of a & c to find whose sum is b.
2. How to factor out a –1 first and then proceed to factor normally.

EXAMPLE 1   Factor.

a. $2x^2 - 7x + 3$

b. $4s^2 - 9s + 5$

c. $2x^2 - 13x + 6$

_____   _____   _____

EXAMPLE 2   Factor.

a. $3n^2 + 14n - 5$

b. $2h^2 + 13h - 7$

c. $3t^2 + 8t + 4$

_____   _____   _____

d. $4n^2 + 11n - 3$

e. $2t^2 + 5t - 63$

f. $6s^2 - s - 5$

_____   _____   _____

EXAMPLE 3   Factor.

a. $-4x^2 + 12x + 7$

b. $-2y^2 - 5y - 3$

c. $-5m^2 + 6m - 1$

_____   _____   _____

EXAMPLE 4 An athlete throws a discus from an initial height of 6 feet and with an initial vertical velocity of 46 feet per second.

a. Write an equation that gives the height (in feet) of the discus as a function of the time (in seconds) since it left the athlete's hand.

Vertical Motion Model: _____

b. After how many seconds does the discus hit the ground?

EXAMPLE 5 A rectangle's length is 13m more than 3 times its width. The area is 10 square meters. What is the width?

length: _____

width: _____