**Math 20-2: U7L2 Notes**

**Solving Quadratic Equations by Factoring**

**Key Math Learnings:**

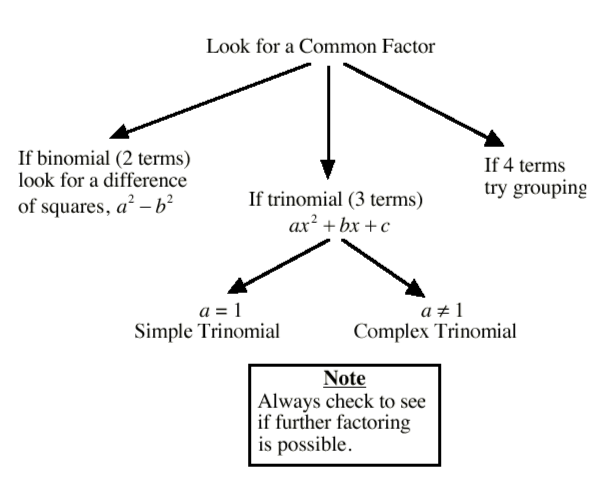
**By the end of this lesson, you will learn the following concepts:**

Determine, by factoring, the roots of a quadratic equation, and verify by substitution.

Express a quadratic equation in factored form, given the zeros of the corresponding quadratic function or the x-intercepts of the graph of the function.

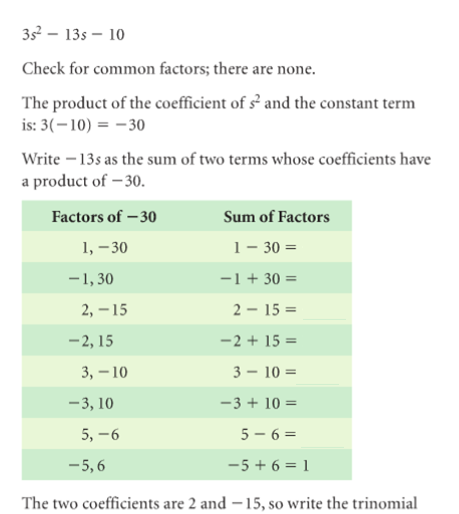
Solve problems by modelling a situation with a quadratic equation and solving the equation.

\* \* \* \*

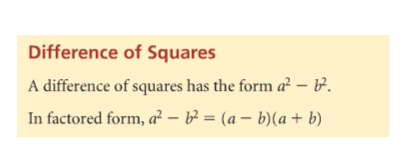


**ALWAYS!! FIRST - Factor out the common factors (GCF) if possible.**

**Trinomials - Method 2**

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**Binomials**

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**Example:**

**Solving Quadratic Equations**

To solve a quadratic equation by factoring:

Step 1:

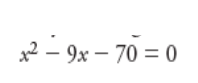
Step 2:

Step 3:

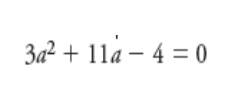
**Example:**

**Example:** Solve by factoring. Verify each solution.

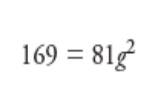
Note: the factor ‘a’ is equal to \_\_\_\_



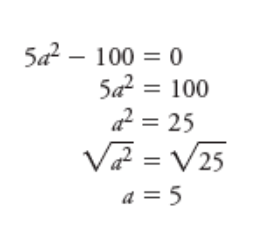
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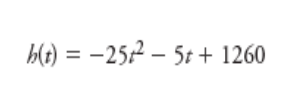


**Example:** Identify and correct any errors in the following solution:



**Example:**

Samuel is hiking along the top of First Canyon on the South Nahanni River in the Northwest Territories. When he knocks a rock over the edge, it falls into the river, 1260 m below. The height of the rock, *h*(*t*), at *t* seconds, can be modelled by the following function:



**a)** How long will it take the rock to reach the water?

**b)** What is the domain of the function? Explain your answer.

**SUMMARY**

• To factor an equation, start by writing the equation in standard form.

• You can set each factor equal to zero and solve the resulting linear equations. Each solution is a solution to the original equation.

• If the two roots of a quadratic equation are equal, then the quadratic equation is said to have one solution.