Name: _____

Solving Equations by Factoring

Exercise 1: For each problem, define a variable. Then use an equation to solve the problem.

1) The length of Hala's house is ten feet longer than it is wide. The area in square feet is 875. Find the dimensions of the house.
2) Find two consecutive even integers whose product is 120.
3) Find two integers whose difference is 3 and whose product is 88.
4) Find two consecutive odd integers whose product is -1

Exercise 2: A flare is launched from a life raft with an initial upward velocity of 192 feet per second. How many seconds will it take for the flare to return to the sea? Use the formula $h = 192t - 16t^2$, where h is the height of the flare in feet and t is the time in seconds.

Exercise 3: The height of a triangle measures 5 centimeters more than its base. The area of the triangle is 18 square centimeters. Find the measures of the base and the height of the triangle.

Exercise 4: The area of a rectangle is given by $A = x^2 + 18x + 72$.

1) Use factoring to find an expression for the dimensions of the rectangle.

2) If the area of the rectangle is 7 square feet, what are the possible values of x?

3) What are the dimensions of the rectangle?

Exercise 5: Recall the area of a circle is given by $A = \pi r^2$, where r is the radius of the circle.

1) If a particular circle is given by $A = \pi(x^2 - 20x + 100)$, find an expression for the radius of the circle.

2) If the area of the circle is 16π square feet, what is the value of x?

Exercise 6: The product of two consecutive odd integers is 1 less than four times their sum. Find the two integers. Hint: There will be *two* sets of solutions.