## ‘s Linear Equations and Inequalities

Your Name Here

**Mathematical Goals**

* Create one-variable linear equations and inequalities from contextual situations.
* Solve and interpret the solution to multi-step linear equations and inequalities in context.

**Common Core State Standards**

**MCC9-12.A.CED.1** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and exponential functions.

**MCC9-12.N.Q.3** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

**Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them.

2. Reason abstractly and quantitatively.

4. Model with mathematics.

7. Look for and make use of structure.

**You have been assigned the following linear equations and inequality word problems. Solve each problem below by using a five-step plan.**

* Drawing a Sketch (if necessary)
* Defining a Variable
* Setting up an equation or inequality
* Solve the equation or inequality
* Make sure you answer the question

1. The difference of 22 and twice a number is 44. Find the number.
2. The sum of three consecutive integers is greater than 42. Find the set of integers with the smallest sum.
3. A rectangle is 12m shorter than it is wide. Its perimeter is 100m. Find its length and width.
4. The length of a rectangle is 4 cm more than the width and the perimeter is at most 52 cm. What are the largest possible dimensions for the rectangle?
5. Find three consecutive even integers whose sum is 144.
6. Find four consecutive odd integers whose sum is 152.
7. Alex has twice as much money as Jennifer. Jennifer has $6 less than Shannon. Together they have $54. How much money does each have?
8. There are five exams in a grading period. A student received grades of 85, 71, 92 and 80 on the first four exams. What grade must the student earn on the last exam to get an average of no less than 85 for the marking period?

9. The product of four and a number is twice the sum of that same number and six.

10. The sum of triple a number and seventeen is 50.