



North Carolina
**Problem-Based
Tasks**

**for Mathematics I
Student Workbook**

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Name: _____

Date: _____

A–CED.4* • Algebra

Rearranging Formulas

Common Core State Standard

A–CED.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm’s law $V = IR$ to highlight resistance R .*★

Problem-Based Task: Bricklayers

The formula $N = 7LH$ is used to determine N , the number of bricks needed to build a wall that is L feet in length and H feet high. A customer would like a wall constructed that is 4 feet high. If the bricklayer wants to use all of the 1,820 bricks that he has readily available, how long will the wall be?

Name: _____

Date: _____

A–REI.1 • Algebra
Properties of Equality

Common Core State Standard

A–REI.1

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

Problem-Based Task: Magic Number

Try this magic number game.

Think of a number. Then double it. Now add 6. Take half of that number. Finally, subtract the number you started with.

Your answer is 3.

Will your answer always be 3? How is this possible? Use the properties of equality to justify your reasoning.

Name: _____

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A-REI.3 • Algebra

Solving Linear Equations

Common Core State Standard

A-REI.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Problem-Based Task: Guess My Number

Here's another number game to try. See if you can guess correctly.

2 less than one-third of a number equals 3 more than one-fourth of the number.

What is the number?