Module 0.2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Relationships Between Quantities and Expressions

The width of a rectangle can be expressed as “2 less than a number”. The length of the rectangle can be expressed as “3 more than 4 times the same number”. Use this information to label the rectangle below.

1. Use the diagram to write and simplify the expression that represents the perimeter of the rectangle.

2. Sally wrote the following expression as her answer to #1. How could she obtain this expression from the diagram?

 $P=2\left(x-2\right)+2(4x+3)$

3. Simplify Sally’s expression. How does this compare to your simplified expression for the perimeter in #2?

4. Write and simplify the expression to represent the area of the rectangle.

5. Jill was trying to find the area of the same rectangle. She wrote the following expression and then simplified. How would you explain Jill’s misconception to her?

 $A=\left(x-2\right)\left(4x+3\right)$

 $A=4x^{2}-6$

**ERROR Analysis:**

Craig and James are writing an algebraic expression for *three less than four times a number*. Are either of them correct? Explain your thinking!!!

 Craig: James:

 3 – 4n 4n – 3

**Given the following, how would you answer it?**

The area of a square is represented by $h^{2}$ where h is the side length of the square.

1. What does the expression $(9h)^{2}$ represent?
2. What would the perimeter of the square be?

