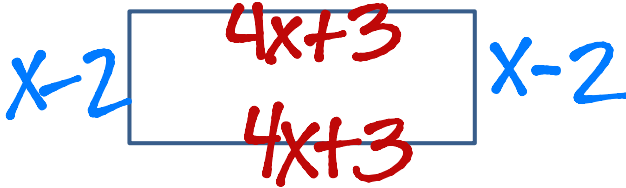Name: _____

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.

$X-2$ $4x+3$ $X-2$

$4x+3$

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

$X-2+4x+3+x-2+4x+3$ ⟨add⟩

$10x+2$

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

$$P = 2(x - 2) + 2(4x + 3)$$

each expression is shown twice, so she simplified her writing and put a 2 out front of each length

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

$2(x-2)+2(4x+3)$

$2x-4+8x+6 = 10x+2$

4. Write and simplify the expression to represent the area of the rectangle.   Area = ℓ·w

$(x-2)(4x+3)$

$4x^2-5x-6$

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?

$$A = (x - 2)(4x + 3)$$

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

She forgot to multiply the X times 3 and 4x times -2.

only mult. x·4x & -2·3

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!!!
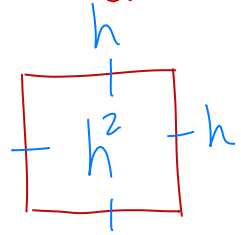
Craig:
3 – 4n

James:
4n – 3

less than
than means
switch

bad day

Given the following, how would you answer it?
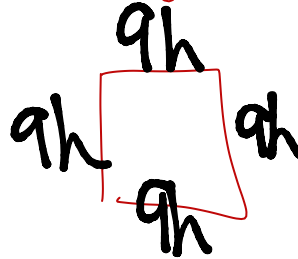The area of a square is represented by h^2 where h is the side length of the square.

a) What does the expression $(9h)^2$ represent?

The sides of the ☐ are 9h

h

h^2 h

b) What would the perimeter of the square be?

$4(9h) = 36h$

9h

9h ☐ 9h

9h

Task 6:

8x + 1

A: Can you find the area of the shape?

$64x^2 - 1$

B: Can you find the perimeter of the shape?

$32x$

8x – 1

8x – 1

8x + 1

C: If x = 8 miles, what is the perimeter of the shape?

$8x + 1 + 8x - 1 + 8x + 1 + 8x - 1$ $32(8) =$

256 miles

8x   1

8x $64x^2$ 8x

–1 –8x –1

$64x^2 - 1$