Modeling (Performance Task)

Name_____ **Date** _____

Perform arithmetic operations on polynomials

MGSE9–12.A.APR.1 Add, subtract, and multiply polynomials; understand that polynomials form a system analogous to the integers in that they are closed under these operations.

Interpret the structure of expressions

MGSE9–12.A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients, in context.

MGSE9–12.A.SSE.1b Given situations which utilize formulas or expressions with multiple terms and/or factors, interpret the meaning (in context) of individual terms or factors.

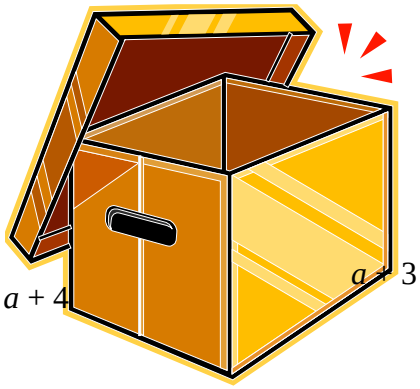
Reason quantitatively and use units to solve problems.

MGSE9–12.N.Q.1 Use units of measure (linear, area, capacity, rates, and time) as a way to understand problems:

a. Identify, use, and record appropriate units of measure within context, within data displays, and on graphs;
b. Convert units and rates using dimensional analysis (English–to–English and Metric–to–Metric without conversion factor provided and between English and Metric with conversion factor);
c. Use units within multi–step problems and formulas; interpret units of input and resulting units of output.

Problem A

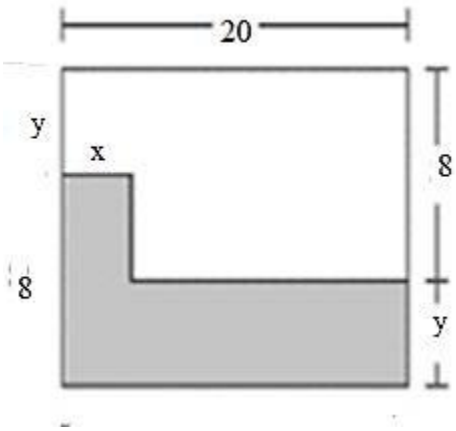
The volume in cubic units of the box is $a^3 + 8a^2 + 19a + 12$. Its length is $a + 4$ units and its width is $a + 3$ units. What is its height?



Problem B

What is an illustration of $(x + 2)(x + 4)$?

Problem C: This rectangle shows the floor plan of an office. The shaded part of the plan is an area that is getting new tile. Write an algebraic expression that represents the area of the office that is getting new tile.



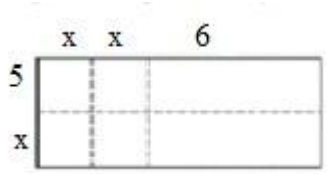
Problem D

What is the rectangle modeling?

	5	+	x
2	10		$2x$
+			
x	$5x$		x^2

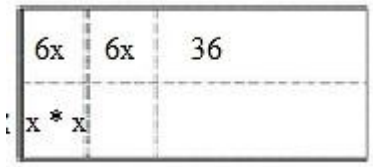
Problem E

What is the product of the expression represented by the model below?



Problem F

Write the dimensions for the rectangle below.



Problem G

Find the area, including units, of the shape below.