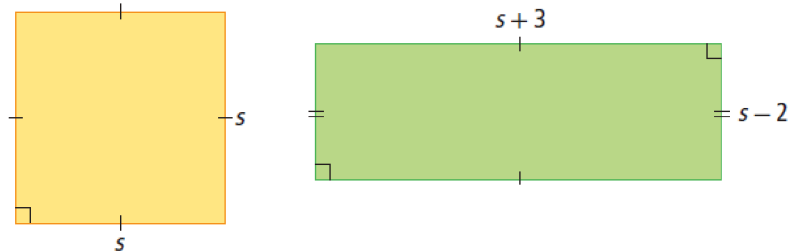


M10C Applying Assignment
Algebra and Number

Name: _____

Select **one** of the following and provide a full solution to the problem on a separate sheet of paper. Clearly **explain** all thinking and work.

1. The volume of a rectangular prism is represented by $12x^3 - 3x$.
 - a. Factor the expression fully.
 - b. Sketch the prism and label its dimensions.
 - c. If x represents 6 cm, what is the surface area of the prism?
2. The area of the square shown is $x^2 - 8x + 16$. What is the area of the rectangle in terms of x ?



3. a) The bacterium *Escherichia coli* is commonly found in the human intestine. A single bacterium has a width of 10^{-3} mm. The head of a pin has a diameter of 1 mm. How many *Escherichia coli* bacteria can fit across the diameter of a pin? Explain how this problem may be solved without the use of a calculator.
- b) What do you know about the sign of the exponent in each case below? Justify your answers.

$$3^x > 1 \qquad 3^x = 1 \qquad 3^x < 1$$

Applying Assignment Rubric

Question #: _____ Due Date: _____ Name: _____

Solution:	
Complete understanding of the problem is illustrated by a correct solution with minor errors or no errors.	5
Good understanding of the problem is illustrated by a partially correct solution with few errors.	4
Average understanding of the problem is illustrated by a partially correct solution with numerous errors.	3
Limited understanding of the problem is illustrated by a partially correct solution with many errors.	2
Little understanding of the problem is illustrated by an incorrect solution.	1
No understanding of the problem is illustrated.	0

Justification / Communication:	
Excellent justification and communication of chosen strategy.	5
Good justification and communication of chosen strategy,	4
Average justification and communication of chosen strategy.	3
Limited justification and communication of chosen strategy.	2
Poor justification and communication of chosen strategy.	1
No justification of chosen strategy.	0