**M10C Applying Assignment Name: \_\_\_\_\_\_\_\_\_\_\_**

Algebra and Number

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 12x3 – 3x.
	1. Factor the expression fully.
	2. Sketch the prism and label its dimensions.
	3. If x represents 6 cm, what is the surface area of the prism?
2. The area of the square shown is x2 – 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.

$$3^{x}>1 3^{x}=1 3^{x}<1$$

Mathematics 10 Common / 10

Applying Assignment Rubric

**Question #:\_\_\_\_\_\_ Due Date:\_\_\_\_\_\_\_\_\_\_\_\_ Name:\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **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 |
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| **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 |