Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ MAP4C1 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Geometry Review

Communication in all questions must include:

***You will be given a reference sheet with conversions and formulas for area, perimeter, volume and surface area.***

* Enough steps shown to clearly demonstrate thinking
* Solutions that are neat and easy to follow
* Proper use of mathematical symbols
* Equal signs aligned
* Units used as required
* Concluding statements for all word problems
* Fractions reduced to lowest terms
* Correct rounding.

**Conversions:**

1. Convert each measurement as indicated:
	1. 4.2 metres to feet and inches
	2. 62 centimeters to metres and inches
	3. 16 feet to metres and inches
	4. Convert 4 litres to quarts and pints
	5. Convert 10 pints to litres and quarts
2. Which is more, 90 metres or 300 feet?

**2D Geometry**

1. Find the area and perimeter of each shape:
2. 
3. 
4. 
5. 
6. 

**3D Geometry**

1. Find the surface area and volume of each figure
2. 
3. 
4. 
5. 
6. 

\*Slant = 50 ft. long

**Optimization**

1. The three rectangles shown all have the same perimeter. Which has the largest volume. Explain in words how you made your choice.
2. A rectangular room needs to have an area of 60 m2 . What are the dimensions of the room with a minimum perimeter, and what is the perimeter?
3. You need to build a rectangular enclosure in your back-yard. You buy some prebuilt sections of fencing which are each 0.25m long. You buy a total of 40m of fencing. Determine the dimensions (length and width) which will maximize the area of your enclosure
4. 35 m of rope are available to create a rectangular swimming area, using the beach as one side. What is the maximum area that can be produced?
5. A marine biologist is collecting data. She has 100 m of rope with buoys to outline a rectangular or circular research area on the surface of the water. Which figure will enclose a greater area? Justify your answer by showing all calculations.
6. A square-based prism must have a surface area of 96 cm2 . What are the dimensions of the prism that produce the maximum volume, and what is the volume?
7. A square-based prism has a volume of 50 in3 . Determine the minimum surface area.