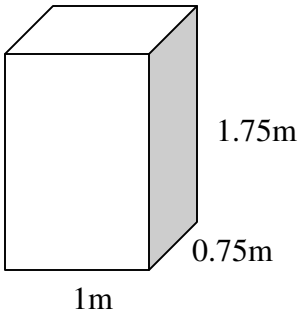
MCT 4C
Mr. Kempe

Name: _____
Date: _____

Test #4 – Measurement and Circle Properties

[40 marks]

Part A: Multiple Choice [K/U, 10 marks]

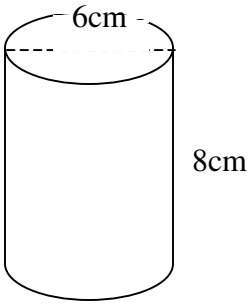


Questions 1 – 3 deal with the rectangular prism, shown right.

1. What is the surface area of the prism?
   a. 7.625m² b. 8.5m c. 1.3125m² d. 10.5m²

2. What is the volume of the prism?
   a. 1.3125m³ b. 3.5m³ c. 4.189m³ d. 9m³

3. If you hand a pyramid with the same base that *just* fit inside the prism, what would its volume be?
   a. 0.4375m³ b. 1.167m³ c. 1.396m³ d. 3m³

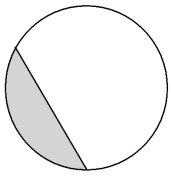


Questions 4 – 5 deal with the cylinder, shown right.

4. What is the surface area of the cylinder?
   a. 207.35cm² b. 251.33cm² c. 527.79cm² d. 703.72cm²

5. What is the volume of the cylinder?
   a. 226.19cm³ b. 452.39cm³ c. 904.78cm³ d. 1206.37cm³

6. What is the name for the shaded area in the circle, shown right?
   a. Segment b. Sector
   c. Chord d. Tangent



7. What is the name for the line segment that forms the boundary of the shaded area?
   a. Chord b. Arc c. Inscribed Angle d. Tangent

8. How many tangent lines can be drawn to a circle from a point outside the circle?
   a. 2 b. 1 c. 0 d. -1

9. If two inscribed angles share the same chord, then …
   a. They are equal b. One is double the other
   c. At least one is 90° d. None of the above

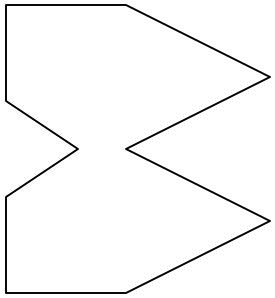
10. Which of the following are perpendicular in/on a circle?
    a. Tangent & radius to the point of tangency b. Any two chords
    c. Two sides of any inscribed triangle d. All of the above

MCT 4C
Mr. Kempe

Name: _____
Date: _____

Part B: Short Answer [C, 10 marks]

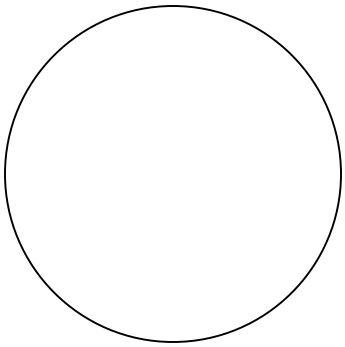
1. Explain how to find the area of the following object. [2 marks]



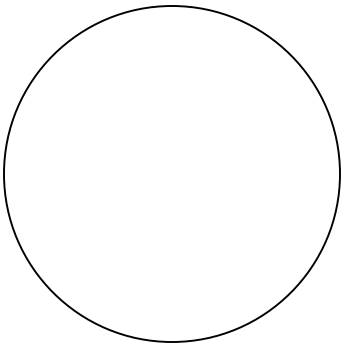
2. There are 12 inches in one foot. Are there 12 cubic inches in one cubic foot? Explain. [2 marks]

3. Draw the following circle definitions and properties.

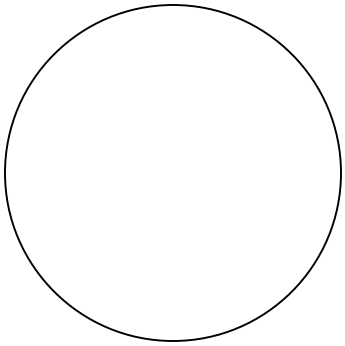
a. A sector of a circle. [1 mark]



b. The perpendicular bisector of a chord passes through the centre of a circle. [2 marks]



c. A central angle is twice the size of an inscribed angle that shares the same chord. [3 marks]



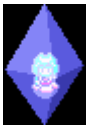
MCT 4C
Mr. Kempe

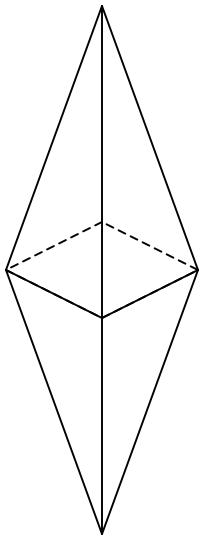
Name: _____
Date: _____

Part C: Problem Solving [ATIPS, 20 marks]

1. The "seat" of a Zorb represents 30% of the volume of the full Zorb. If the diameter of the zorb is 3m, what is the diameter of the seat? [4 marks]

2. In *The Legend of Zelda: A Link to the Past*, seven princesses were encased in crystal prisons, like the one shown. The overall height of the prism is 3.6m; at its widest, the crystal is square and 1.4m wide. What is the surface area of a crystal prison? [4 marks]

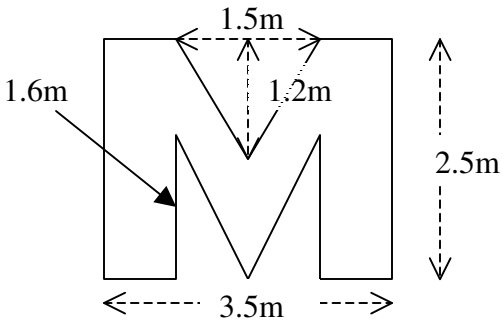




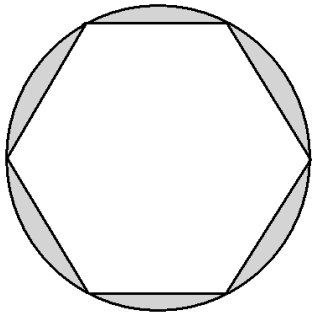
MCT 4C Name: _____

Mr. Kempe Date: _____

3. The sign for "MMMMMuffins!" features 5 M's with the dimensions shown. Determine the total area of the M's.



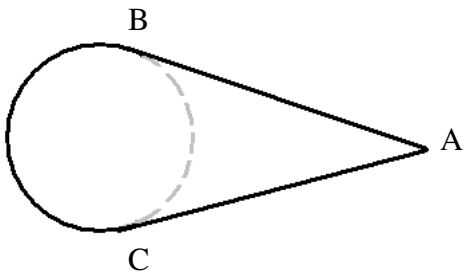
4. A regular hexagon (just) sits inside a circle with a radius of 12cm. Determine the area of the shaded region.



MCT 4C
Mr. Kempe

Name: _____
Date: _____

5. A jogger starts at point A, jogs 225m and joins a circular track at B. She follows it around to C, then jogs straight back to A. If the radius of the track is 100m, determine the total distance the runner jogged. [4 marks]



6. In the diagram, AB = 6, BC = 2.5, and AC = 6.5. Is AC the diameter of the circle shown? Explain. [4 marks]