

Unit #5 – Measurement

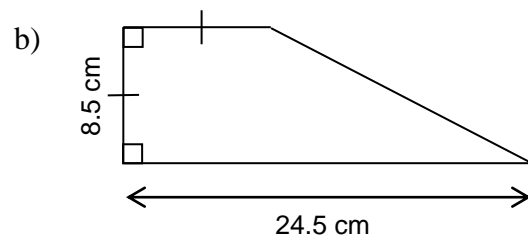
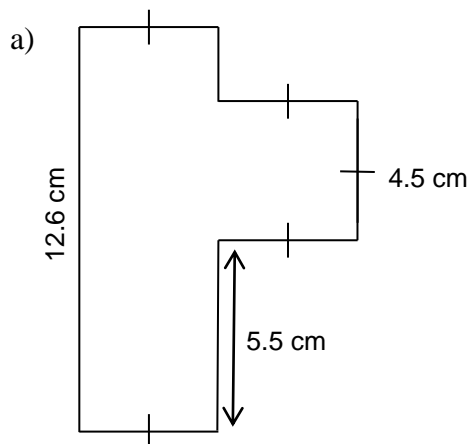
Progress Check

MPM1D1

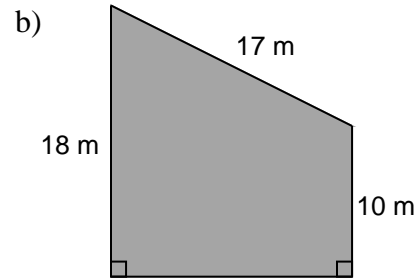
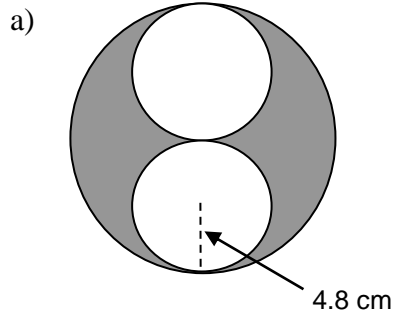
The purpose of the progress check is to diagnose areas that you need more practice with before the test.

1. Review your notes before trying the questions in this package.
2. Answer the questions on this handout. Treat it like a test. **DO NOT** look at the answers until you have finished all of the questions.
3. Use the answers provided to check and see how you did.
4. Go to the course website (<http://sites.google.com/a/hdsb.ca/TAB-MPM1D1>) if you need to see the full worked out solutions (click on Unit #6).
5. Use the additional review questions provided in the textbook (see unit outline) to practice more questions like the ones you had trouble with in this package.
6. Although this progress check contains a wide selection of questions from this unit, it does not cover **ALL** of the possible questions from the unit.

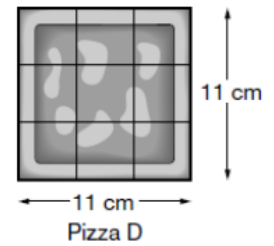
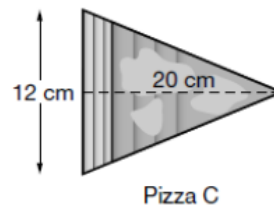
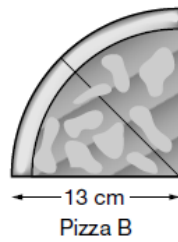
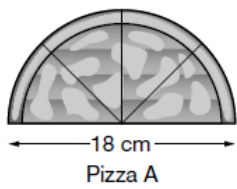
1. Calculate the perimeter of the following figures:



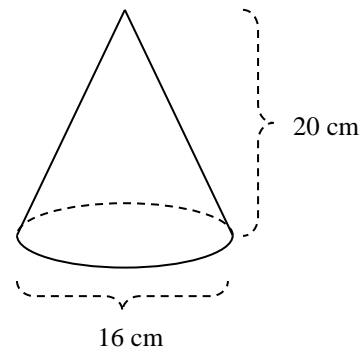
2. Calculate the area of the shaded region in each of the following figures:



3. Kenny can choose one of the following slices of pizza. Which one has the largest area? Justify your answer.



4. Calculate the volume and surface area of the following cone:



5. Determine what formulas you would use to calculate the surface area and volume of the following shapes. Explain.

a)



(Ignore Legs)

Volume

Surface Area

b)

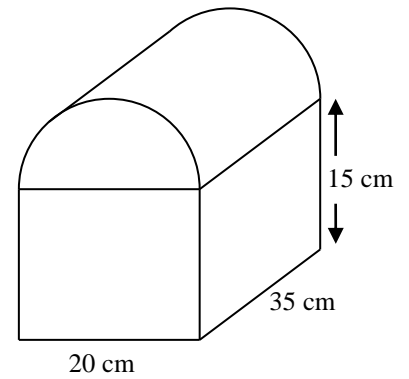


Volume

Surface Area

6. Joey builds a wooden treasure chest in shop class, as shown below.

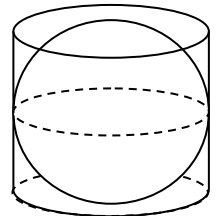
a) Determine the total volume of the chest.



b) How much wood is required to build the chest?

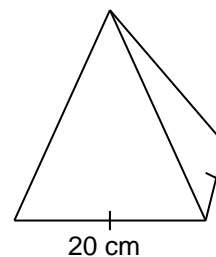
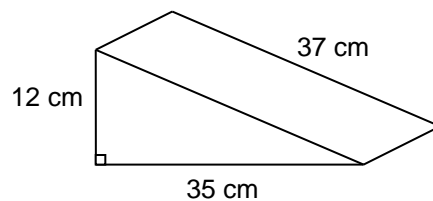
c) If Joey wasted an additional 20% of the wood that he used due to cuts and mistakes. How much wood did he use in total?

7. A sphere with a radius of 5 cm fits tightly inside a cylindrical container. Calculate the amount of empty space inside the container.



8. Sophia is considering two shapes. The triangular prism has a surface area of 1680 cm^2 . The square based pyramid has a volume of 3200 cm^3 .

a) Which container has the largest volume?



b) Which container has the largest surface area?

Answers:

1a] 43.2 cm 1b] 59.62 cm 2a] 144.76 cm^2 2b] 210 m^2 3] Slice B ($A = 127.23 \text{ cm}^2$, $B = 132.73 \text{ cm}^2$, $C = 120 \text{ cm}^2$, $D = 121 \text{ cm}^2$)

4] $V = 1340.41 \text{ cm}^3$, $SA = 742.42 \text{ cm}^2$ 5A] $V = \frac{blh}{2}$ (It is a triangular prism), $SA = ah + bh + ch + \frac{bl}{2}$ (One of the two triangles is missing, so I divided

the bl by 2) 5b] $V = \frac{4\pi r^3}{3} \div 2 + \pi r^2 h$ (There is only half a sphere, so I divided it by 2 and then added it to the volume of a cylinder),

$SA = \frac{4\pi r^2}{2} + \pi r^2 + 2\pi r h$ (There is only half a sphere, so I divided it by 2. The top part of the cylinder is missing, so I removed one of the πr^2 . I left in the

bottom circle for the floor.) 6a] $V = 15997.79 \text{ cm}^3$ 6b] $SA = 3763.72 \text{ cm}^2$ 6c] 4516.46 cm^2 7] 261.80 cm^3

8a] Square Based Pyramid ($V_{\text{Tri}} = 3150 \text{ cm}^3$, $V_{\text{Pyr}} = 3200 \text{ cm}^3$) 8b] Triangular Prism ($SA_{\text{Tri}} = 1680 \text{ cm}^2$, $SA_{\text{Pyr}} = 1360 \text{ cm}^2$)