MPM 1D9 | **Semester 2, 2014 - 2015**

Grade 9 Pre-AP Math
Quiz: Unit 0 Main Ideas

Mr. Nolfi

Victim: Mr. Solutions Well done Mr. L. !!

KU	APP	COM
10 /10	12 /12	10 /10

Multiple Choice **(5 KU)**

Identify the choice that best completes the statement or answers the question. Use the provided blank space to write the letter corresponding to your choice.

1. d ✓ Mathematical relationships are expressed using…**(1 KU)**

   (a) equations **(b)** tables **(c)** words **(d)** all of the above

2. c ✓ A cone and a cylinder have the same height and radius. Which statement is ***FALSE***? **(1 KU)**

   (a) The cylinder's volume is triple the volume of the cone.
   (b) The cone's volume is one-third the volume of the cylinder.
   (c) The cylinder's surface area is triple the cone's surface area.
   (d) The cylinder can hold three times as much water as the cone.

3. c ✓ Which of the following is ***NOT*** a basic mathematical concept? **(1 KU)**

   (a) operations **(b)** objects **(c)** operettas **(d)** relationships

4. c ✓ Which of the following is ***NOT*** an expression for surface area? **(1 KU)**

   (a) $\pi rs + 2\pi r^2$ **(b)** $2\pi rh + \pi r^2$ **(c)** $2lwh + \frac{2}{3}\pi r^3$ **(d)** $lw + lh + wh$

5. a ✓ A triangle has a base length of 50 cm and a height of 1.5 m. What is its area? **(1 KU)**

   (a) 0.375 m² **(b)** 37.5 m² **(c)** 37.5 cm² **(d)** 0.375 cm²

   $\frac{(0.5\text{ m})(1.5\text{ m})}{2} = \frac{0.75\text{ m}^2}{2} = 0.375\text{ m}^2$

Modified True/False **(5 KU)**

Indicate whether each statement is ***true*** or ***false***. If false, ***change*** the ***underlined part*** to make the statement true.

6. T/F F ✓✓ If a cylinder's radius is doubled, its volume <u>doubles</u>. **Change:** quadruples ✓✓

7. T/F F ✓✓ The ultimate goal of a mathematician is to <u>memorize</u> mathematical relationships. **Change:** discover ✓✓

✓ = ½ mark

8. T/F F ✓✓ $(A_{base})(\text{height})$ is the volume of any solid with a <u>uniform</u>. **Change:** uniform cross-section ✓✓

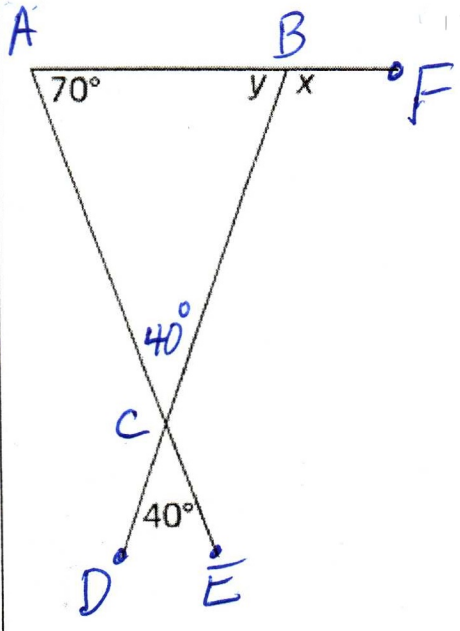
9. T/F F ✓✓ If a rectangle's width and length are doubled, the perimeter is <u>quadrupled</u>. **Change:** doubled ✓✓

10. T/F F ✓✓ The sum of the exterior angles of a triangle is <u>180°</u>. **Change:** 360° ✓✓

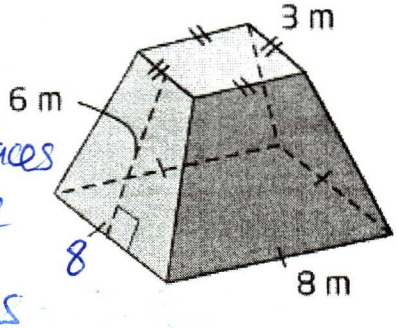
KU	APP	TIPS	COM
- 0	- 0	- 0	- 0

11. Find the measures of the angles labelled "x" and "y." State your reasoning. **(6 APP)**

Angle Measure	*Justification (Reasoning)*
$x =$ 110° ✓	∠ABD and ∠FBD are supplementary (straight line) ∴ $x + y = 180°$ ✓ ∴ $x + 70° = 180°$ ∴ $x = 110°$ shown below ✓
$y =$ 70° ✓	∠ACB = ∠DCE = 40° ✓ (opposite angles) In ΔABC, $y + 40° + 70° = 180°$ ✓ (sum of interior angles of Δ is 180°) ∴ $y = 70°$



12. The base for a large statue is made in the form of the ***frustum*** of a pyramid shown at the right. The top and sides are painted using a type of paint that covers about 9 m^2/L. How many litres of paint are needed? **(6 APP)**



Let A represent the total area of the surfaces to be painted. Also, let A_{Trap} represent the area of one of the trapezoidal faces and let A_{Top} represent the area of the top face.

Then, $A = 4A_{Trap} + A_{Top}$ ✓ ✓ ✓

$= 4\left[\frac{6(3+8)}{2}\right] + 3(3)$ ✓

$= 141\ m^2$ ✓

∴ amount of paint needed

$= \frac{141\ m^2}{9\ m^2/L} \doteq 15.7\ L$ ✓ ✓

KU	APP	TIPS	COM
-0	-0	-0	-0