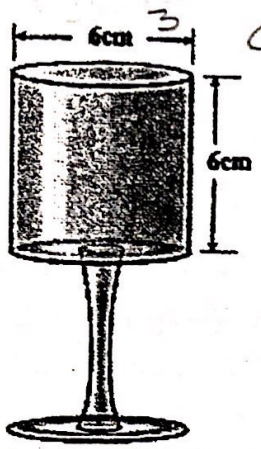
Geometry
Cross Sections & [redacted]

Name: _____

Date: _____

WARM-UP: Find the volume of each glass. Which of the following holds the most liquid? 3

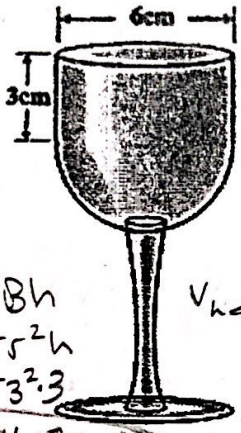
Glass 1



Cylinder

$V = Bh$
$V = \pi r^2 h$
$V = \pi 3^2 \cdot 6$
$V = 169.6\ cm^3$

Glass 2

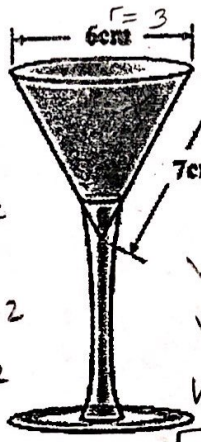


Cylinder
Hemisphere

$V_{cyl} = Bh$
$= \pi r^2 h$
$= \pi 3^2 \cdot 3$
$\doteq 84.8\ cm^3$

$V_{hemi} = \left(\frac{4}{3}\pi r^3\right) \div 2$
$= \left(\frac{4}{3}\pi 3^3\right) \div 2$
$= 113.1 \div 2$
$= 56.6\ cm^3$

Glass 3



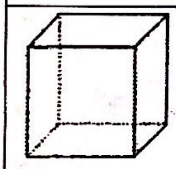
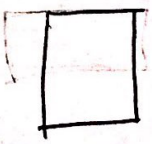
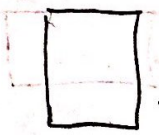
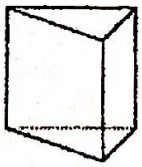
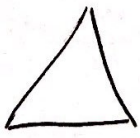
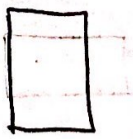
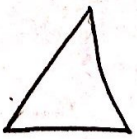
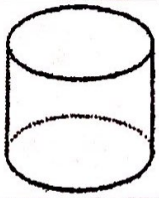
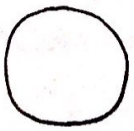
Cone

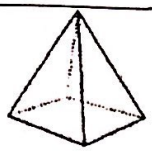
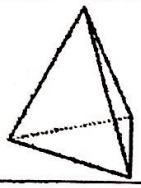
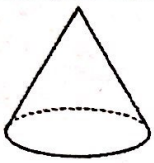
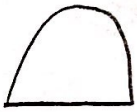
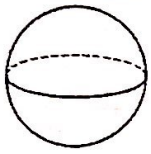
$3^2 + x^2 = 7^2$
$9 + x^2 = 49$
$x^2 = 40$
$x = 6.3$

$V = \frac{1}{3}Bh$
$V = \frac{1}{3}\pi r^2 h$
$V = \frac{1}{3}(\pi 3^2)6.3$
$V = 59.4\ cm^3$

$V_{Total} = 84.8 + 56.6 = 141.4\ cm^3$

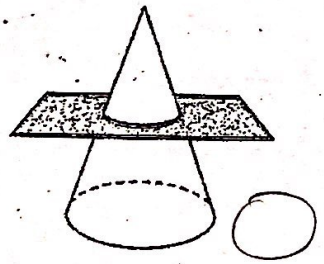
CROSS SECTIONS – The shape you get when cutting straight through a 3-dimensional shape.

	NAME	SHAPE OF BASE	Which figure results when you slice it PARALLEL to the base?	Which figure results with you slice it PERPENDICULAR to the base?	Which figure results when you slice it DIAGONAL to the base?
	Rectangular Prism	Rectangle			
	Triangular Prism	Triangle			
	Cylinder	Circle			

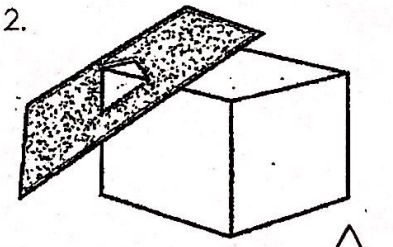
	NAME	SHAPE OF BASE	Which figure results when you slice it PARALLEL to the base?	Which figure results with you slice it PERPENDICULAR to the base?	Which figure results when you slice it DIAGONAL to the base?
	Rectangular Pyramid	rectangle			Trapezoid 
	Triangular Pyramid	triangle			
	Cone	circle			
	Sphere	No Base			

PRACTICE

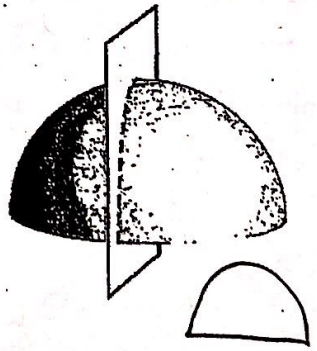
What are the shapes of the cross sections below?

1. 

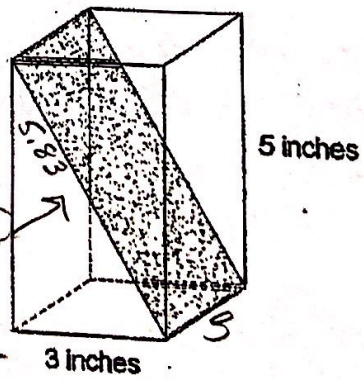
circle

2. 

Triangle

3. 

4. Andrew had a piece of foam in the shape of a rectangular prism as shown below. The base is a square with sides 3 inches long, and the piece is 5 inches tall. He cut the foam along the diagonal plane shown by the shaded area. What is the area of the shaded diagonal plane?



① Use Pythagorean Thm to find length of diagonal

$3^2+5^2=x^2$

$9+25=x^2$

$34=x^2$

$x \approx 5.83$

② Use $A=l \cdot w$ to find area

$A=5.83(3)$

$A=17.49\ in^3$