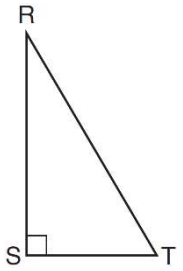
Name _____ Date _____
Mr. Schlansky Geometry

Three Dimensional Rotations

1. Which object is formed when right triangle *RST* shown below is rotated around leg $\overline{RS}$?



1) a pyramid with a square base
2) an isosceles triangle
3) a right triangle
4) a cone

2. If the rectangle below is continuously rotated about side *w*, which solid figure is formed?

1) pyramid
2) rectangular prism
3) cone
4) cylinder

3. If you rotated the shaded figure below about line *m*, which solid would result from the revolution?

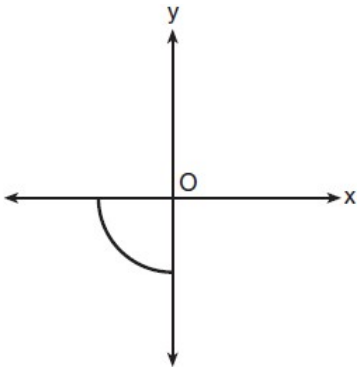
(1) cylinder (2) cone (3) cube (4) sphere

4. If you rotated the triangular region of the figure below about line m, what solid would result from the revolution?

(1) cylinder (2) cone (3) cube (4) sphere

5. Circle O is centered at the origin. In the diagram below, a quarter of circle O is graphed. Which three-dimensional figure is generated when the quarter circle is continuously rotated about the y-axis?

1) cone
2) sphere
3) cylinder
4) hemisphere



6. Which three-dimensional figure will result when a rectangle 6 inches long and 5 inches wide is continuously rotated about the longer side?

1) a rectangular prism with a length of 6 inches, width of 6 inches, and height of 5 inches
2) a rectangular prism with a length of 6 inches, width of 5 inches, and height of 5 inches
3) a cylinder with a radius of 5 inches and a height of 6 inches
4) a cylinder with a radius of 6 inches and a height of 5 inches

7. An isosceles right triangle whose legs measure 6 is continuously rotated about one of its legs to form a three-dimensional object. The three-dimensional object is a

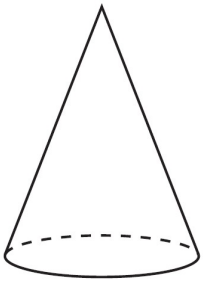
1) cylinder with a diameter of 6
2) cylinder with a diameter of 12
3) cone with a diameter of 6
4) cone with a diameter of 12

8. If an equilateral triangle is continuously rotated around one of its medians, which 3-dimensional object is generated?

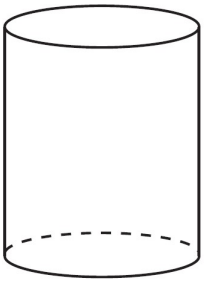
1) cone
2) pyramid
3) prism
4) sphere

9. A student has a rectangular postcard that he folds in half lengthwise. Next, he rotates it continuously about the folded edge. Which three-dimensional object below is generated by this rotation?

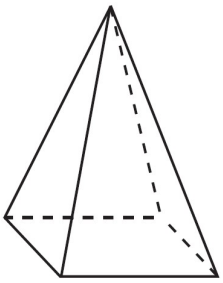
1)



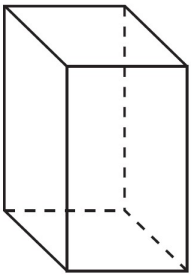
3)



2)

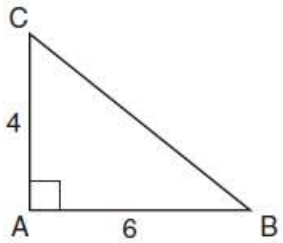


4)

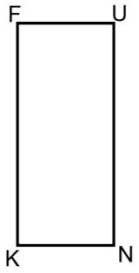


10. In the diagram below, right triangle *ABC* has legs whose lengths are 4 and 6. What is the volume of the three-dimensional object formed by continuously rotating the right triangle around $\overline{AB}$?

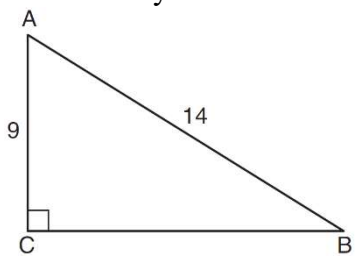
1) 32π
2) 48π
3) 96π
4) 144π



11. In the rectangle below, $\overline{UN} = 8\ in$ and $\overline{KN} = 3\ in$. Find the volume to the nearest tenth of a square inch of the three dimensional object created by rotating rectangle FUNK continuously about side $\overline{FK}$



12. In the diagram of right triangle ABC shown below, $AB = 14$ and $AC = 9$.
What is the volume of the three dimensional object formed when the triangle is continuously rotated about side $\overline{BC}$ to the nearest tenth.



13. A rectangle whose length and width are 10 and 6, respectively, is shown below. The rectangle is continuously rotated around a straight line to form an object whose volume is 150π.

Which line could the rectangle be rotated around?

1) a long side
2) a short side
3) the vertical line of symmetry
4) the horizontal line of symmetry