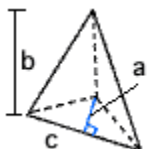

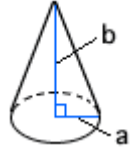


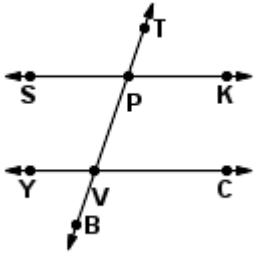
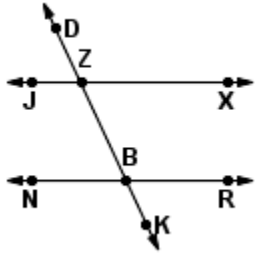
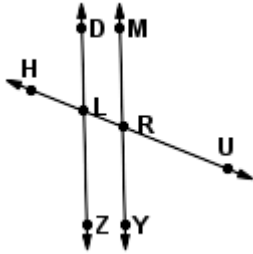
First name: \_\_\_\_\_ Last name: \_\_\_\_\_

Student ID: \_\_\_\_\_

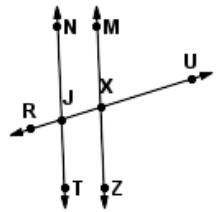
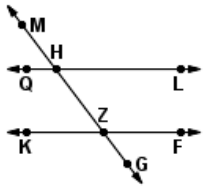
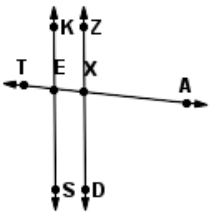
**Geometry 2 Homework****Basic problems****1. Find the volume of each solid. Leave your answer in terms of  $\pi$  where necessary.**

<p>1. </p> <p><math>a = 1.3 \text{ yd}</math>  <math>b = 6.5 \text{ yd}</math>  <math>c = 6.3 \text{ yd}</math></p>	<p>2. </p> <p><math>a = 10 \text{ in}</math></p>	<p>3. </p> <p><math>a = 6 \text{ m}</math>  <math>b = 8 \text{ m}</math></p>
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**2. Find the measure of the angle.**

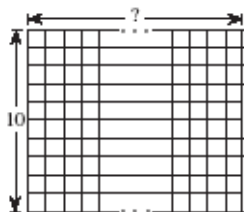
<p>1. </p> <p><math>\overleftrightarrow{SK} \parallel \overleftrightarrow{YC}</math>  <math>m\angle TPK = \underline{\hspace{2cm}}</math>  <math>m\angle YVB = 109^\circ</math></p>	<p>2. </p> <p><math>\overleftrightarrow{JX} \parallel \overleftrightarrow{NR}</math>  <math>m\angle ZBR = \underline{\hspace{2cm}}</math>  <math>m\angle NBZ = 115^\circ</math></p>	<p>3. </p> <p><math>\overleftrightarrow{DZ} \parallel \overleftrightarrow{MY}</math>  <math>m\angle ZLR = \underline{\hspace{2cm}}</math>  <math>m\angle LRM = 58^\circ</math></p>
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**3. Fill in the blank with an angle.**

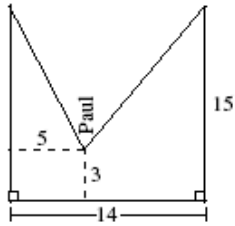
<p>1. </p> <p><math>\overleftrightarrow{NT} \parallel \overleftrightarrow{MZ}</math>  <math>\angle RJT</math> and <math>\underline{\hspace{2cm}}</math> are alternate exterior angles</p>	<p>2. </p> <p><math>\overleftrightarrow{QL} \parallel \overleftrightarrow{KF}</math>  <math>\angle QHM</math> and <math>\underline{\hspace{2cm}}</math> are alternate exterior angles</p>	<p>3. </p> <p><math>\overleftrightarrow{KS} \parallel \overleftrightarrow{ZD}</math>  <math>\angle EXD</math> and <math>\underline{\hspace{2cm}}</math> are vertical angles</p>
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### Challenge Problems

1. A trapezoid ABCD has parallel sides AB and DC of lengths 8 and 22. If both diagonals AC and BD are of length 17, what is the area of the trapezoid?
2. If in regular hexagon ABCDEF, vertices ACE are joined to form a triangle, what percentage of the area of the hexagon is triangle ACE?
3. Triangle ABC has  $AB = 1$ ,  $AC = 2$ , and  $BC = \sqrt{3}$ . If equilateral triangle XYZ has Z on AB, Y on BC and X on AC such that XY is parallel to AB, what is the length of the side of the triangle XYZ?
4. A grid with 10 rows and some number of columns is made up of unit squares, as shown. A domino ( ) can be placed horizontally or vertically to exactly cover two unit squares. There are 2004 positions in which the domino could be placed. What is the number of columns in the grid?

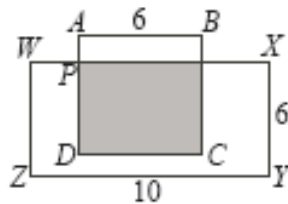


5. A “slackrope walker” is much like a tightrope walker except that the rope on which he performs is not pulled tight. Paul, a slackrope walker, has a rope tied to two 15 m high poles which are 14 m apart. When he is standing on the rope 5 m away from one of the poles, he is 3 m above the ground. How long is the rope?

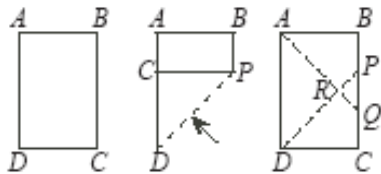


6. A wheel with radius 1 m is rolled in a straight line through one complete revolution on a flat horizontal surface. How many metres did the centre of the wheel travel horizontally from its starting location?

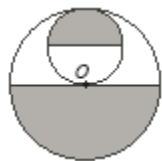
7. In the diagram, ABCD is a square with side length 6, and WXYZ is a rectangle with  $ZY = 10$  and  $XY = 6$ . Also, AD and WX are perpendicular. If the shaded area is equal to half of the area of WXYZ, what is the length of AP?



8. A rectangular piece of paper ABCD is folded so that edge CD lies along edge AD, making a crease DP. It is unfolded, and then folded again so that edge AB lies along edge AD, making a second crease AQ. The two creases meet at R, forming triangles PQR and ADR, as shown. If  $AB = 5$  cm and  $AD = 8$  cm, what is the area of quadrilateral DRQC, in  $\text{cm}^2$ .



9. In the diagram, each circle is divided into two equal areas and O is the centre of the larger circle. The area of the larger circle is  $64\pi$ . What is the total area of the shaded regions?



10. A piece of string fits exactly once around the perimeter of a square whose area is 144. Rounded to the nearest whole number, what is the area of the largest circle that can be formed from the piece of string?

11. In the diagram, the circle is inscribed in the square. This means that the circle and the square share points S, T, U, and V, and the width of the square is exactly equal to the diameter of the circle. Rounded to the nearest tenth, what percentage of line segment XY is outside the circle?

