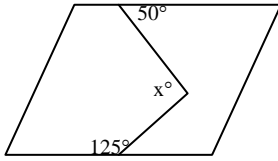


#1 Geometry – Hustle
MA@ National Convention 2010

Given the parallelogram with angles marked. Find the value of x .

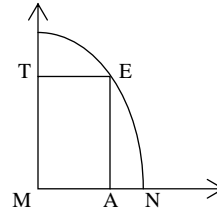


Answer : _____

Round 1 2 3 4 5

#3 Geometry – Hustle
MA@ National Convention 2010

Rectangle TEAM is inscribed in the sector of the circle as shown. If $AN=ET=9$, find ME.



Answer : _____

Round 1 2 3 4 5

#2 Geometry – Hustle
MA@ National Convention 2010

Given a circle with diameter endpoints $(6, 2)$ and $(-2, 4)$ and equation $x^2 + y^2 + Ax + By + C = 0$ give the value of C .

Answer : _____

Round 1 2 3 4 5

#4 Geometry – Hustle
MA@ National Convention 2010

A rhombus has a perimeter of 28 and acute angles of 60° . Find the area.

Answer : _____

Round 1 2 3 4 5

#5 Geometry – Hustle
MA@ National Convention 2010

\overline{DC} intersects \overleftrightarrow{DW} at a 30° angle. $DC=12$ and $\overline{CW} \perp \overleftrightarrow{DW}$. Find the volume of the solid formed when $\triangle WDC$ is rotated around DW .

Answer : _____

Round 1 2 3 4 5

#7 Geometry – Hustle
MA@ National Convention 2010

A solid gold sphere with $V=288\pi$ is melted down and recast as a solid cylinder with the same radius as the sphere. Find the surface area of the cylinder.

Answer : _____

Round 1 2 3 4 5

#6 Geometry – Hustle
MA@ National Convention 2010

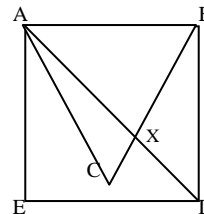
Circle G has radius of 8 and circle W has radius of 12. If $GW=25$, find the length of the segment on the common internal tangent, between points of tangency.

Answer : _____

Round 1 2 3 4 5

#8 Geometry – Hustle
MA@ National Convention 2010

$\triangle ABC$ is regular and inside regular quadrilateral $ABDE$ as shown. Find $m\angle CXD$ in degrees.



Answer : _____

Round 1 2 3 4 5

#9 Geometry – Hustle
MA@ National Convention 2010

A plane 30cm from the center of a sphere intersects the sphere so that the intersection is a circle with radius 16cm. Find the diameter of the sphere in cm.

Answer : _____

Round 1 2 3 4 5

#11 Geometry – Hustle
MA@ National Convention 2010

The radii of 2 circles are 7 and 2. The distance between the centers is 13. Find the length of their common external tangent.

Answer : _____

Round 1 2 3 4 5

#10 Geometry – Hustle
MA@ National Convention 2010

A tetrahedron has all edge lengths equal to 4. What is the total surface area of the tetrahedron?

Answer : _____

Round 1 2 3 4 5

#12 Geometry – Hustle
MA@ National Convention 2010

A solid cube with edge 5 has a right cylindrical hole with diameter 2 drilled completely through a pair of perpendicular bases. Find the new surface area of the resultant solid.

Answer : _____

Round 1 2 3 4 5

#13 Geometry – Hustle
MA@ National Convention 2010

Two poles, perpendicular to the ground are 50 meters apart. Each pole has a wire attached at the top. The wire is also attached at the bottom of the opposite pole. If the poles are 40m and 15m tall, how far above the ground in meters do the wires cross?

Answer : _____

Round 1 2 3 4 5

#15 Geometry – Hustle
MA@ National Convention 2010

What is the sum of the degree measures of the points (5 per star) of all of the stars on the current United States Flag?

Answer : _____

Round 1 2 3 4 5

#14 Geometry – Hustle
MA@ National Convention 2010

What is the measure of the angle in degrees between the hands of a clock at 3:42pm?

Answer : _____

Round 1 2 3 4 5

#16 Geometry – Hustle
MA@ National Convention 2010

A quadrilateral inscribed in a circle has side lengths of 8, 6, 10, and 12. Find the difference of the quadrilateral's perimeter and area.

Answer : _____

Round 1 2 3 4 5

#17 Geometry – Hustle
MA@ National Convention 2010

The apothem of a regular hexagon measures 7 inches. Find the ratio of the area to the perimeter.

Answer : _____

Round 1 2 3 4 5

#19 Geometry – Hustle
MA@ National Convention 2010

A scalene triangle has side lengths of 13, 15, and 10. Find the area.

Answer : _____

Round 1 2 3 4 5

#18 Geometry – Hustle
MA@ National Convention 2010

A convex polygon has 90 diagonals. How many sides does the polygon have?

Answer : _____

Round 1 2 3 4 5

#20 Geometry – Hustle
MA@ National Convention 2010

A square inscribed in a circle has a diagonal of 14. Find the ratio between the area of the square and the circumference of the circle.

Answer : _____

Round 1 2 3 4 5

#21 Geometry – Hustle
MA@ National Convention 2010

The legs of a right triangle are 8 and 15.
 Find the length of the altitude drawn
 to the hypotenuse.

Answer : _____

Round 1 2 3 4 5

#22 Geometry – Hustle
MA@ National Convention 2010

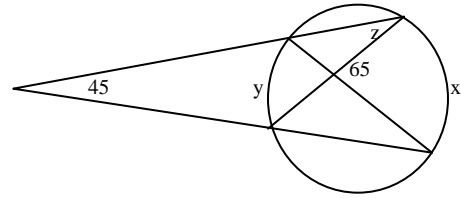
The point of intersection of the altitudes of a
 triangle is called? Must spell correctly!

Answer : _____

Round 1 2 3 4 5

#23 Geometry – Hustle
MA@ National Convention 2010

Find the sum of the values of x, y, and z in degrees.

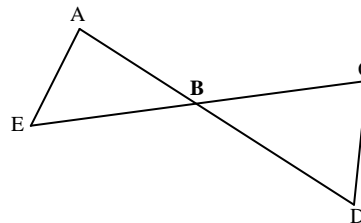


Answer : _____

Round 1 2 3 4 5

#24 Geometry – Hustle
MA@ National Convention 2010

Given: $AB=DB$, $EB=CB$, $\overline{EA} \perp \overline{AD}$; Which triangle
 congruence theorem can be used to prove:
 $\triangle ABE \cong \triangle DBC$?



Answer : _____

Round 1 2 3 4 5

#25 Geometry – Hustle
MA@ National Convention 2010

Given: B { - 3, - 1, 0, 2, 4, 6}

S { - 2, 0, 1, 2, 3}

U { - 1, 1, 2, 4, 5, 6}

Find: $(B \cap S) \cup (S \cap U)$

Answer : _____

Round 1 2 3 4 5