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TEAM QUESTION 1

GEOMETRY

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The diagonals of a rhombus are 18 and 80. Find the perimeter of the rhombus.

TEAM QUESTION 2

GEOMETRY

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A circle of radius 10 has an area that is numerically equal to the length of a side of an equilateral triangle. Find the length of an altitude of the triangle.

TEAM QUESTION 3

GEOMETRY

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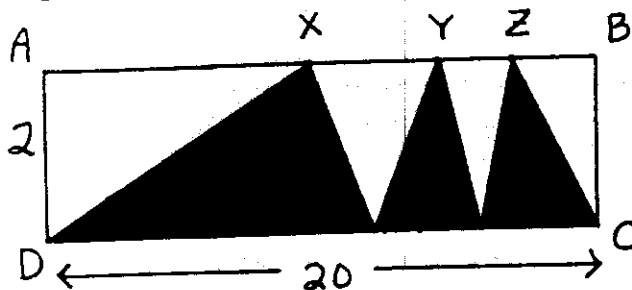
Find the area of a triangle with sides of lengths 14, 48, and 50.

TEAM QUESTION 4

GEOMETRY

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In rectangle ABCD, X, Y, and Z are the midpoints of AB, XB and YB respectively. Find the area of the shaded region.



TEAM QUESTION 5

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The area of a regular hexagon is $54\sqrt{3}$. A similar hexagon has $\frac{4}{3}$ the perimeter of the first one. Find the length of the apothem of the larger hexagon.

TEAM QUESTION 6

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Triangle ABC has vertices at the points $A = (0,0)$, $B = (11,0)$, and $C = (4,7)$. If this triangle is rotated about the X-axis what is the volume of the solid that is generated?

TEAM QUESTION 7

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Find the total surface area of a right square pyramid with a base edge of 24 and an altitude of 5.

TEAM QUESTION 8

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A regular octagon is formed by cutting off the corners of a square. Find the area of the original square if the sides of the octagon are each $\sqrt{2}$.

TEAM QUESTION 9

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Find the altitude to the longest side of a triangle whose sides are 5, 6, and 7.

TEAM QUESTION 10

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Find the ratio of the circumferences of the inscribed and circumscribed circles for any square.

TEAM QUESTION 11

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The points $(1,2)$, $(3,5)$ and $(6,0)$ are vertices of a parallelogram. Find all other possible points for the fourth vertex.

TEAM QUESTION 12

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Find the product of the radii of the inscribed and circumscribed circles of a triangle with sides of lengths 7, 24, and 25.

TEAM QUESTION 13

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Find the area of a kite whose diagonals are 17 and 68.

TEAM QUESTION 14

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Find the area of the circumscribed circle for a 3-4-5 right triangle.

TEAM QUESTION 15

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Find AB.

