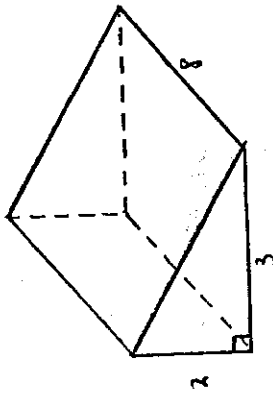


GEOMETRY TEAM QUESTION 1

What is the total surface area of this right triangular prism?



JANUARY REGIONAL

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GEOMETRY TEAM QUESTION 4

JANUARY REGIONAL

Find the number of line segments determined by ten points on a line.

GEOMETRY TEAM QUESTION 5

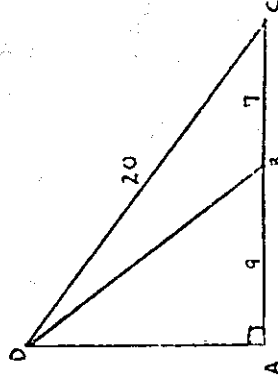
JANUARY REGIONAL

Find the shortest distance between the two lines $y=3x+7$ and $y=3x-3$.

GEOMETRY TEAM QUESTION 6

JANUARY REGIONAL

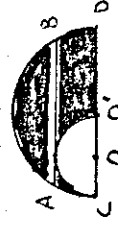
In the given figure, what is the area of $\triangle BCD$?



GEOMETRY TEAM QUESTION 7

JANUARY REGIONAL

Pictured are two semicircles with centers O and O' as shown. AB is tangent to the smaller semicircle and parallel to CD . If $AB=24$, find the area of the shaded region.



GEOMETRY TEAM QUESTION 9

JANUARY REGIONAL

Find $A+B+C$ if:

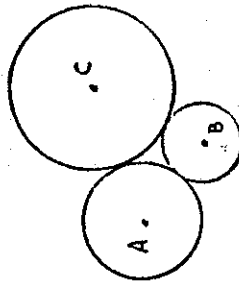
A = area of an isosceles trapezoid with sides of $5\sqrt{2}$, 10 , $5\sqrt{2}$, and 20 .

B = area of a circle containing an inscribed equilateral triangle of perimeter 18 .

GEOMETRY TEAM QUESTION 2

JANUARY REGIONAL

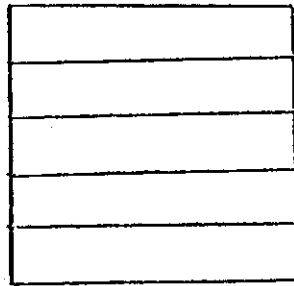
Given 3 externally tangent circles, as shown, with centers A , B , C , $AB=8$, $BC=12$, and $AC=14$. Find the sum of the 3 radii.



GEOMETRY TEAM QUESTION 3

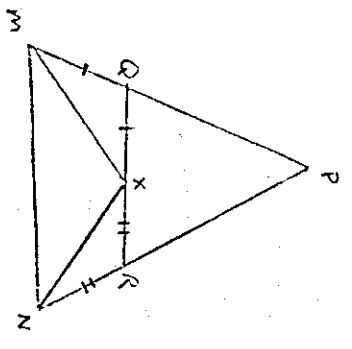
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This square is divided into 5 congruent rectangles. If the perimeter of one of the rectangles is 30, what is the perimeter of the square?



C = area of a circle with a diameter of 10

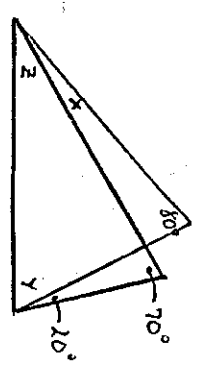
What is the perimeter of $\triangle PQR$ if $PM=10$, $MN=15$ and $PN=17$?



GEOMETRY TEAM QUESTION 10

JANUARY REGIONAL

If $z=3x$, find the numeric value of y .



GEOMETRY TEAM QUESTION 13

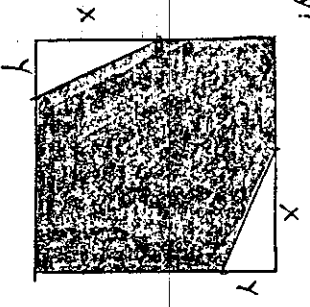
JANUARY REGIONAL

In acute $\triangle KRI$ all sides are of integral length and the perimeter is 18. How many such triangles are possible?

GEOMETRY TEAM QUESTION 14

JANUARY REGIONAL

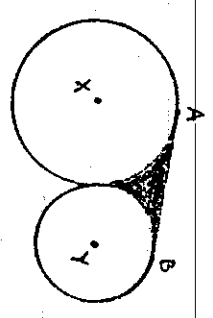
The square has an area of $4x^2$. If a rectangle with width x has the same area as the shaded region, what is the length of the rectangle in terms of x and y ?



GEOMETRY TEAM QUESTION 11

JANUARY REGIONAL

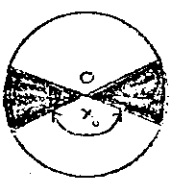
Circles x and y , with radii 6 and 2 respectively, are tangent to each other. \overline{AB} is a common external tangent. What is the area of the shaded region?



GEOMETRY TEAM QUESTION 15

JANUARY REGIONAL

Circle O with radius 2 has the shaded regions formed by 2 diameters. The total shaded area is π , find x .



The altitude of a square pyramid is 10 and a side of the base is 15. Find the area of a cross section at a distance 6 from the vertex and parallel to the base.