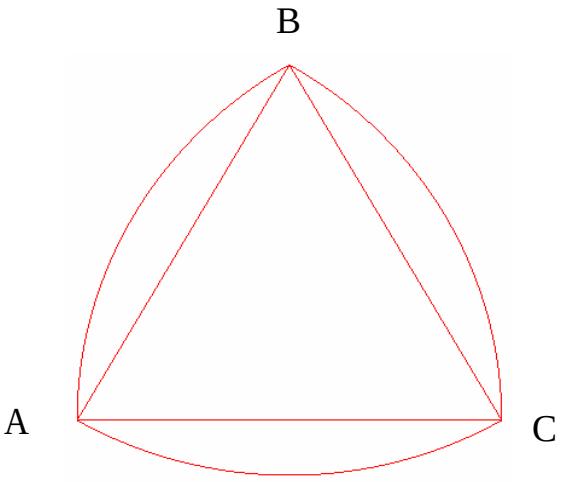
ROUND #1

Gainesville College
Mathematics Tournament
For Two-Year Colleges
April 2, 2005

ΔABC is equilateral with side length 2. Attach circular arcs $\overset{\frown}{AB}$, $\overset{\frown}{AC}$, and $\overset{\frown}{BC}$ with centers at C, B, and A respectively. Find the exact value, or an approximation accurate to 5 decimal places, of the area of the resulting figure.



If you need this document in another format, please email minsu.kim@ung.edu or call 678 - 717 - 3546.

ROUND #2

ROUND #3

Gainesville College
Mathematics Tournament
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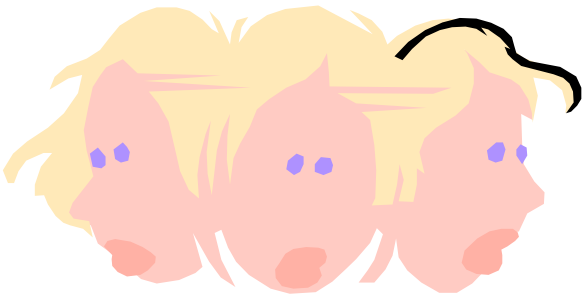
If $x + y + z = 2$ and $xy + yz + xz = 1$, what is $x^2 + y^2 + z^2$?



ROUND #5

Gainesville College
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At the start of the day, Michael has between $140 and $150 in one-dollar bills and five-dollar bills. At the end of the day, he again has only one-dollar and five-dollar bills, but he has the same number of one-dollar bills as he had five-dollar bills at the beginning of the day, and the same number of five-dollar bills as he had one-dollar bills at the beginning of the day. If he ends the day with exactly $\frac{1}{3}$ less money than he began it with, what was the exact starting amount?