

**2008 Middle School Math Festival
Engineering Project**

SCHOOL _____

Team Number _____

Student Names: _____

GOAL: Construct a right isosceles triangular prism, which has two congruent ends (called bases) which are right isosceles triangles. The ends are connected by three rectangular faces.

MATERIALS PROVIDED: 2 – 8 ½ by 11 inch card stock

MATERIALS TO CONSTRUCT (brought by the team):

Scissors, ruler (with centimeters), and tape

RESTRICTIONS: Failure to follow these restrictions will disqualify the team.
No other materials may be used.
Measurements must be to the nearest centimeter (no decimals).
ALL VALUES SHOULD BE WHOLE NUMBERS!!
Incorrect calculations will disqualify the team.

EQUATIONS: b = length of the congruent legs of the isosceles right triangle
 p = perimeter of the triangle
 B = area of the right triangle = $\frac{1}{2} b^2$
 h = height of the prism (distance between the two bases)

Total Surface Area = $SA = 2B + ph$

Volume = $V = Bh$

Team Values:

Length of the leg of the triangle = _____ cm

Prism height = _____ cm

Length of the hypotenuse of the triangle = _____ cm

Proctor's Initials _____ (verifying measurements)

Volume = _____ cm^3

Total Surface Area = _____ cm^2

Sum = Volume + Total Surface Area = _____

JUDGING: Proctors will verify the measurements. An Excel program will calculate the volume, total surface area, and sum compared to student calculations. Projects will be rank ordered from the largest sum to the smallest sum for each Team category.