Hardest Geometry Problems

1. Square pyramid A has a base edge length of 16 units and a height of 6 units. Square pyramid B has the same base length as pyramid A and a height of 15 units. What is the ratio of the surface area of pyramid A to the surface area of pyramid B?

    A. 0.72

    B. 0.80

    C. 1.25

    D. 1.39

2. A right rectangular prism has a base area of $8t$ square centimeters. The base of the prism is 4 cm and the height of the prism is 10 cm. Which expressions represents the surface area of the prism in cm^2?

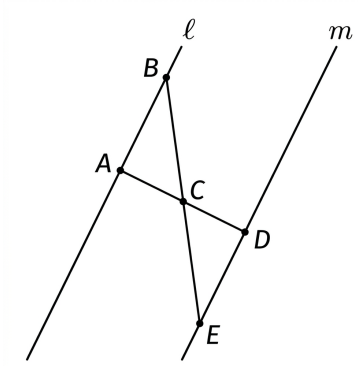
   A. $16t + 160$

   B. $22t + 80$

   C. $56t + 80$

   D. $300t$

3.



Note: Figure not drawn to scale.

In the figure, segment AD and segment BE intersect at point C. Segment AD is perpendicular to line ℓ at point A. Which of the following additional pieces of information is(are) sufficient to determine that triangle ABC is congruent to triangle DEC?

I. Segment AD is perpendicular to line m at point D.

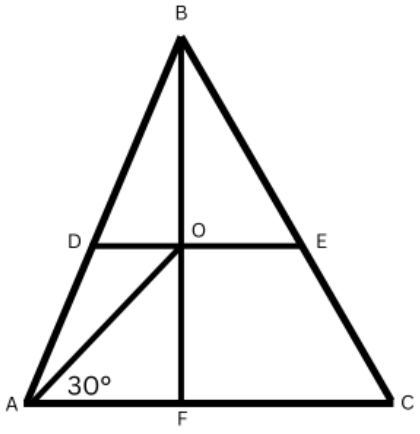
II. $AC = 21$ and $DC = 21$.

A. I is sufficient by itself, but II is not.

B. II is sufficient by itself, but I is not.

C. I is sufficient by itself, and II is sufficient by itself.

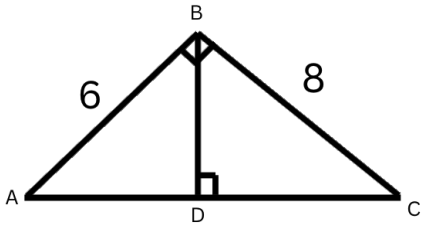
D. Neither I nor II is sufficient by itself.

4. 

Note: Figure not drawn to scale.

In triangle ABC, $AB = BC$. Points D and E lie on segments AB and BC, respectively, such that line segments DE and AC are parallel. Point O is the midpoint of line segment DE, and the measure of $\angle OAC$ is $30°$. Point F lies on segment AC, and line segment BF passes through point O. If $AB = 96$ and $AO = BO$, what is the length of line segment BE?

5.



In the figure shown, angle B is a right angle, and $\overline{BD}$ is an altitude to side $\overline{AC}$. If $AB = 6$ and $BC = 8$, what is the length of $\overline{BD}$?

A. 4.2

B. 4.8

C. 5

D. 7

6. A line intersects two parallel lines, forming four acute angles and four obtuse angles. The measure of one of these eight angles is $(9x - 330)^\circ$. The sum of the measures of four of the eight angles is k°. Which of the following could NOT be equivalent to k, for all values of x?

   A. $-18x + 1600$

   B. $18x - 480$

   C. $2040 - 36x$

   D. 360