

**Partial credit is based on work shown!**

2pts

1. Which of the following are not sufficient to prove that triangles are congruent?

SAS, ASA, SSA, SSS, AAA SSA + AAA

5pts

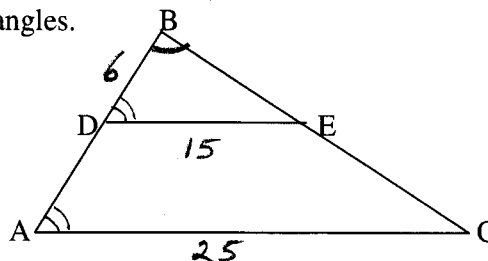
2. In the following figure,  $AC \parallel DE$  and  $AC = 25$ ,  $DE = 15$  and  $DB = 6$ . (All measurements are cm.)

- a. Justify why triangles ABC and DBE are similar triangles.

$\angle B$  is in both  $\Delta s$

$\angle D \cong \angle A$  corresponding angles  
for parallel lines

$\Delta ABC \cong \Delta DBE$  by AA



- b. Find the length of AB. Set up a proportion and show your work.

$$\frac{15}{25} = \frac{6}{AB} \qquad AB = \frac{6(25)}{15} = 10 \text{ cm}$$

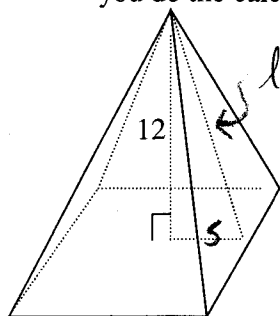
$$15AB = 6(25)$$

8pts

3. Pictured below is a square pyramid with base edge of 10 meters and height of 12 meters.

- a. What is the volume of this pyramid? b. What is the total surface area of the pyramid?

(For each part write a verbal description of how to calculate the volume or surface area before you do the calculations.)



10 meters

$$\left\{ \begin{array}{l} l^2 = 5^2 + 12^2 \\ l^2 = 25 + 144 \\ l^2 = 169 \\ l = 13 \end{array} \right.$$

$$V = \frac{1}{3}(\text{area of square})(\text{height})$$

$$V = \frac{1}{3}Ah$$

$$V = \frac{1}{3}(10^2)(12) = 400 \text{ m}^3$$

Surface area = area of  $\square$  + 4  $\Delta s$

$$SA = A + \frac{1}{2}pl$$

$\left\{ \begin{array}{l} \text{note: } p = \text{perimeter of } \square \\ = 4 \cdot 10 = 40 \\ l = \text{slant height} \end{array} \right.$

$$SA = 10^2 + \frac{1}{2}(4 \cdot 10)(13)$$

$$SA = 100 + \frac{1}{2}(40)(13)$$

$$SA = 100 + 260 = 360 \text{ m}^2$$