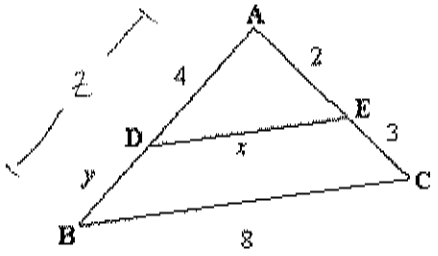
OVERLAPPING PROPORTIONS

1) If DE || BC, will ΔDAE ~ ΔBAC? Justify your answer.



∠DAE ≅ ∠BAC

∠ADE ≅ ∠ABC

ΔDAE ~ ΔBAC by AA~

2) Find x and y.

$\frac{SM}{LG} = \frac{x}{8} = \frac{2}{5}$

$5x = 16$

$\boxed{x = 3.2}$

$\frac{SM}{LG} = \frac{4}{z} = \frac{2}{5}$

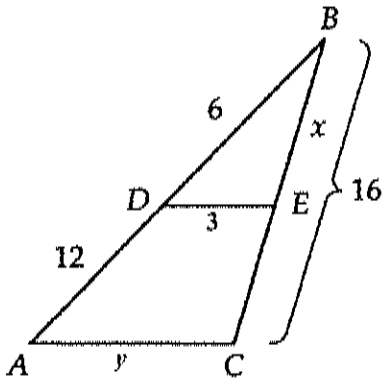
$2z = 20$

$z = 10$

$\boxed{y = 6}$

Theorem: A line parallel to one side of a triangle and intersecting the other two sides forms a triangle similar to the original triangle.

3) $\overline{DE} \| \overline{AC}$. Find x & y.



$\frac{SM}{LG} = \frac{x}{16} = \frac{6}{18}$

$18x = 96$

$\boxed{x = 5\frac{1}{3}}$

$\frac{SM}{LG} = \frac{3}{y} = \frac{6}{18}$

$6y = 54$

$\boxed{y = 9}$