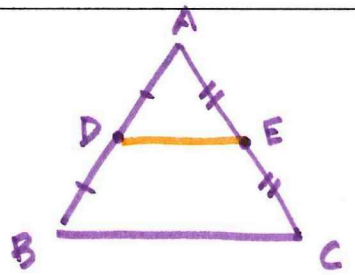
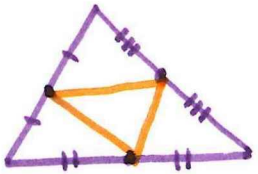
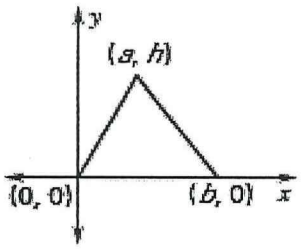
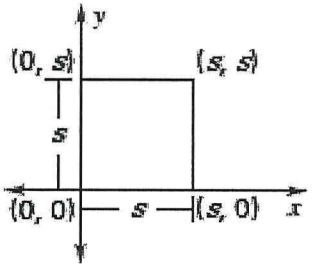
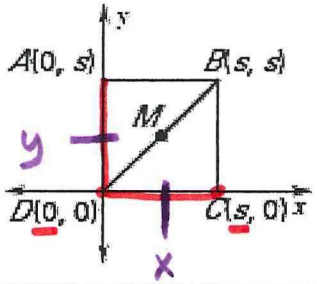
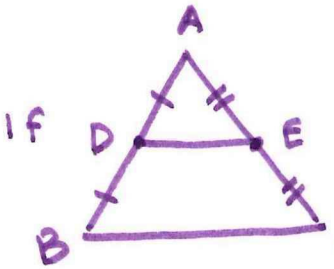
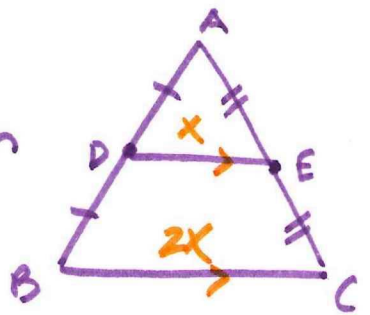
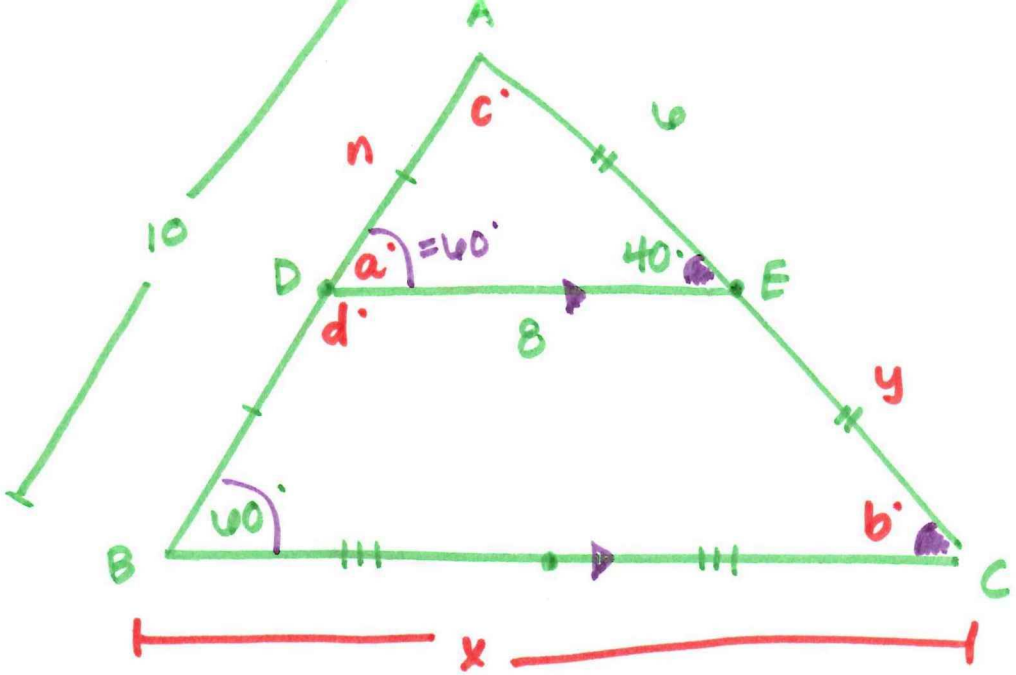
Section 5.1 Date

Midsegment Theorem and Coordinate Proof

Vocabulary	Definition	Example
MIDSEGMENT of a TRIANGLE	A midsegment of a triangle is a segment that connects the midpoints of two sides of the triangle.	 $\overline{DE}$ is a midsegment of $\triangle ABC$ 
COORDINATE PROOF	A coordinate proof involves placing geometric figures in a coordinate plane. Examples:  	Find the length and midpoint of the square.  Side Length = s $m = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ $m = \left(\frac{0+s}{2}, \frac{0+s}{2}\right)$ $M = \left(\frac{s}{2}, \frac{s}{2}\right)$
MIDSEGMENT THEOREM midsegment Thm.	↳ midsegment The segment connecting the midpoints of two sides of a triangle is *parallel* to the third side and is *half* as long. ↳ not connected to	If  $\overline{DE}$ is a midsegment of $\triangle ABC$, then  $\overline{DE} \parallel \overline{BC}$ $DE = \frac{1}{2}(BC)$ OR $BC = 2(DE)$



$b = 40^\circ$ CA

$a = 60^\circ$ CA

$C = 180 - (60 + 40)$

$C = 80^\circ$ Δ sum

$d = 180 - 60$

$d = 120^\circ$ CI or LP

$n = \frac{10}{2}$

$h = 5$

$y = 6$

$x = 2(8)$

$x = 16$