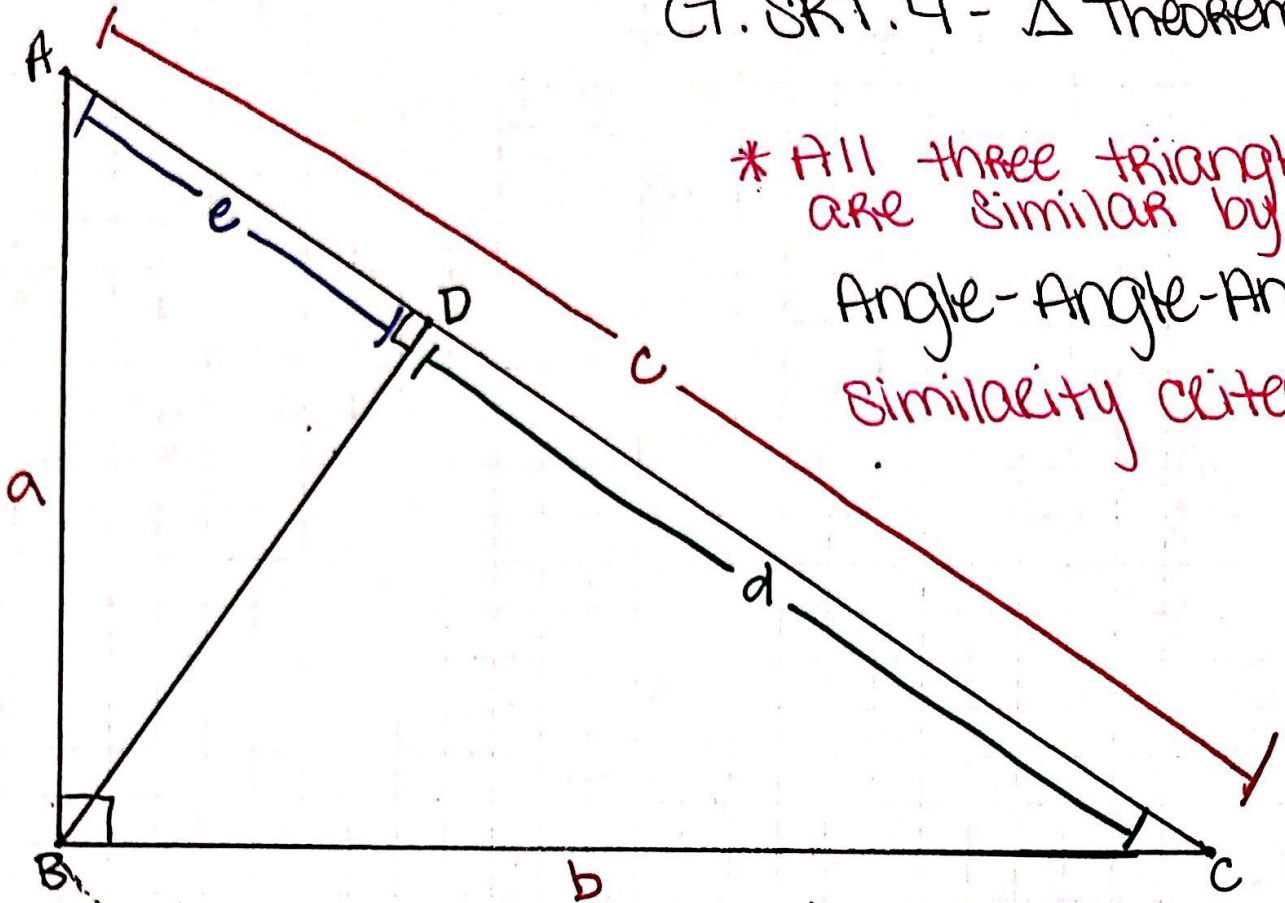


GT. SRT. 4 -  $\Delta$  Theorems.



\* All three triangles are similar by Angle-Angle-Angle similarity criteria.\*

$$\triangle \overline{ABC} \sim \triangle \overline{BDC}$$

$$\frac{BC}{DC} = \frac{AC}{BC}$$

$$\frac{b}{d} = \frac{c}{b}$$

$$b^2 = cd$$

$$\triangle \overline{ABC} \sim \triangle \overline{ADB}$$

$$\frac{AB}{AD} = \frac{AC}{AB}$$

$$\frac{a}{e} = \frac{c}{a}$$

$$a^2 = ce$$

add both equations together because the small and medium  $\Delta$ 's make up the large triangle.

$$b^2 + a^2 = cd + ce$$

$$a^2 + b^2 = c(d+e) \quad *d+e=c$$

$$a^2 + b^2 = c(c)$$

$$a^2 + b^2 = c^2$$