CONCEPT: DERIVING THE MULTIPLIER ALGEBRAICALLY

- We can use a simplified aggregate expenditures model to show how the multiplier is derived:
  - ☐ The multiplier signifies the multiple increase in GDP based on an initial increase in spending
  - ☐ Recall the calculation of the multiplier:

$$Multiplier = \frac{1}{1 - MPC}$$

  - ☐ To derive it algebraically we start with a ***private closed economy*** (no government and no international trade)

$$AE = C + I$$

$$AE = A + MPC(YD) + I$$

Since there are no taxes or government transfers in this model, then GDP (i.e. national income) = Disposable Income

In equilibrium, GDP = AE

Rearrange the formula algebraically and solve for GDP

Analysis: A $1 increase in spending (from a change in A or I) will result a 1/(1-MPC) increase in equilibrium GDP