Example 1 Let $T = G = 0$. Let $C(Y - T) = 0.5(Y - T)$. Let $I(r) = 100 - 10r$. Let $P = 1$ and $L(r, Y) = Y - 10r$. Let $M^s$ be left unspecified.

Then the IS equation is

$$Y = 0.5Y + 100 - 10r$$

or

$$Y = 200 - 20r$$

and the LM equation is

$$M^s = Y - 10r$$

Substitute the IS equation into the LM equation to get

$$M^s = 200 - 20r - 10r = 200 - 30r$$

and so

$$r^* = (200 - M^s)/30$$

and

$$Y^* = 300 - 20 * (200 - M^s)/30.$$
Suppose initially $M^s = 100$. Suppose there is now a productivity slowdown which shifts the investment function to

$$I(r) = 90 - 10r,$$

which, in turn, drives the economy into a “recession”.

Now as an economist you know several ways through which you can pull the economy back from the recession and restore the initial $Y^*$. 

(1) Suppose you want to pursue an expansionary monetary policy to offset the effect of the lower investment. By how many percentage points should increase $M^s$?

(2) What are other policy changes you can pursue to achieve the same objective?