

3a) The change is \$5000.

$$3b) 90\% \times \$5000 = \$4500$$

$$3bii) \text{ reserve ratio} = \frac{1}{10}$$

$$\begin{aligned} \text{max increase in money supply} &= \$5000 \times \frac{1}{\frac{1}{10}} \\ &= \$5000 \times 10 \\ &= \$50000 \end{aligned}$$

3c) The money supply would grow but by a smaller amount. By keeping some of the deposit as excess reserves, less money is ~~lent~~ <sup>lent</sup> than the total amount ~~of money~~ <sup>than the total amount</sup> that is possible or allowed to be loaned out. Since lending is the mechanism by which money is created, and there is less lending than accounted for in (b) where it was assumed that the bank lent out all the excess reserves and kept none, the money supply grows by less than what was anticipated in (b).

3d) The money supply would grow but by a smaller magnitude. Since the public decides to hold some money in the form of currency rather than demand deposits, less money goes back to the bank. Banks therefore have less excess reserves and so can loan out less money. Since lending is the mechanism by which money is created and there is less lending, the ~~the~~ money supply grows by a smaller amount.