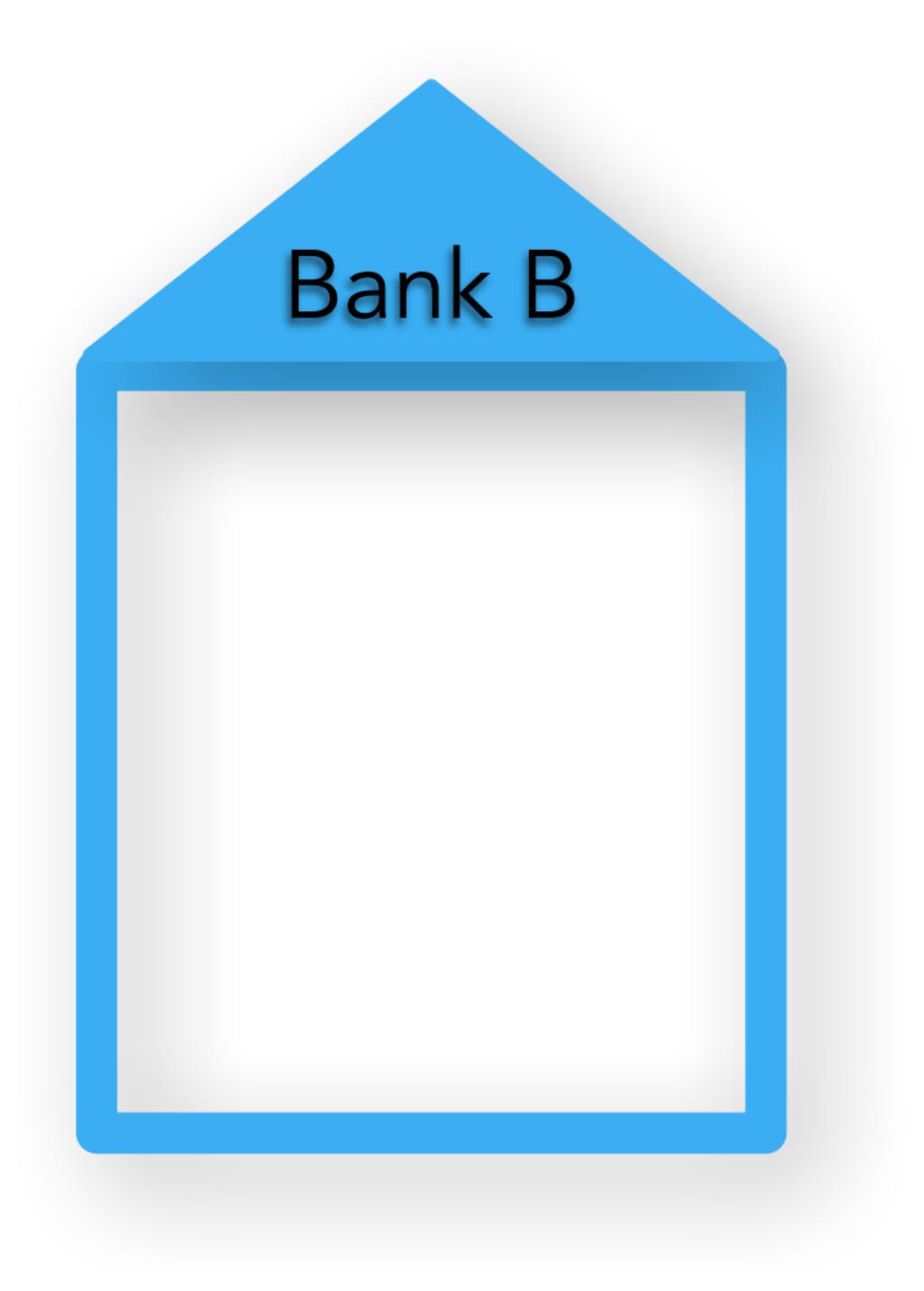






**Bank A**

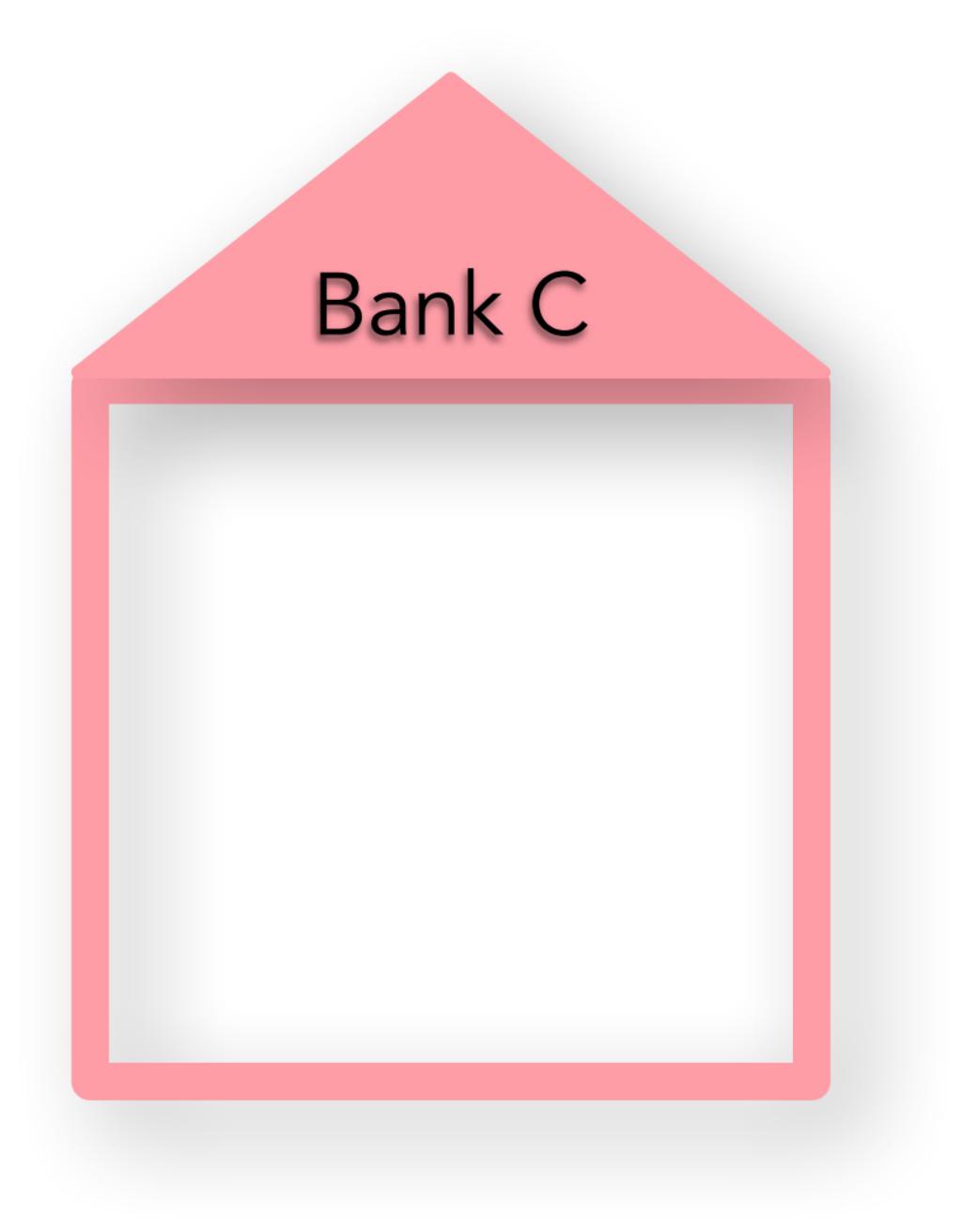
New  
Money:  
3,000b



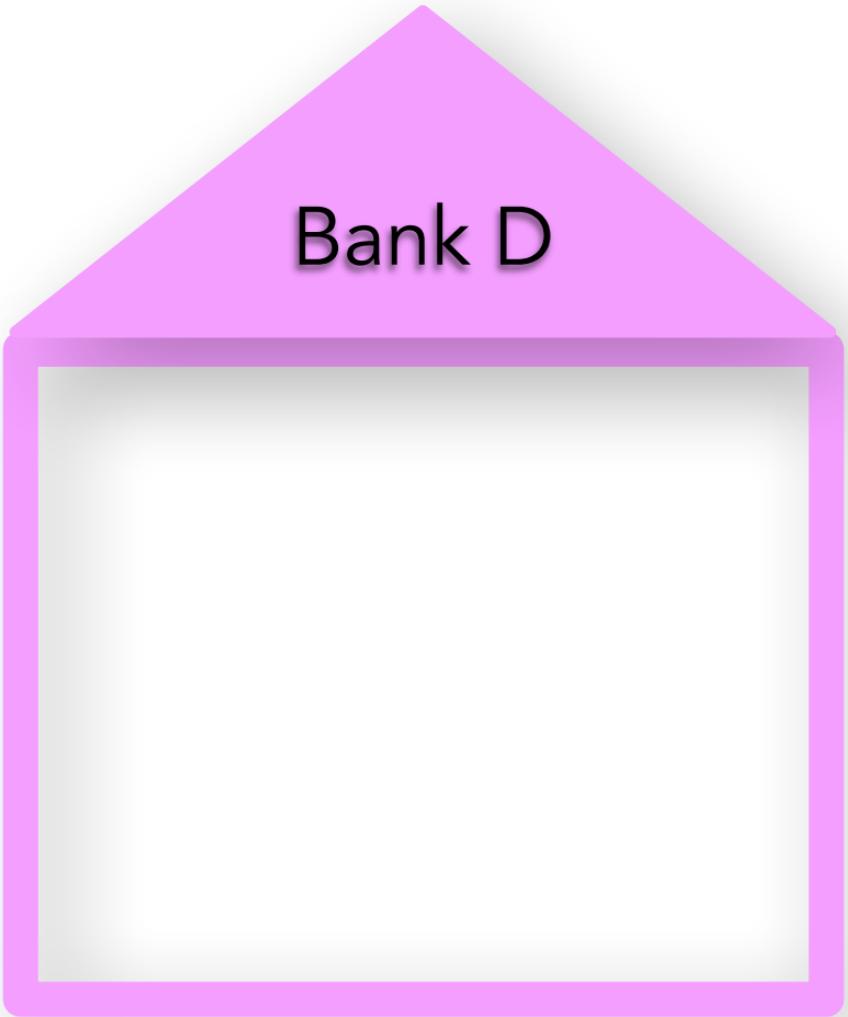
Bank B

$$L = 0.9 * 3,000$$

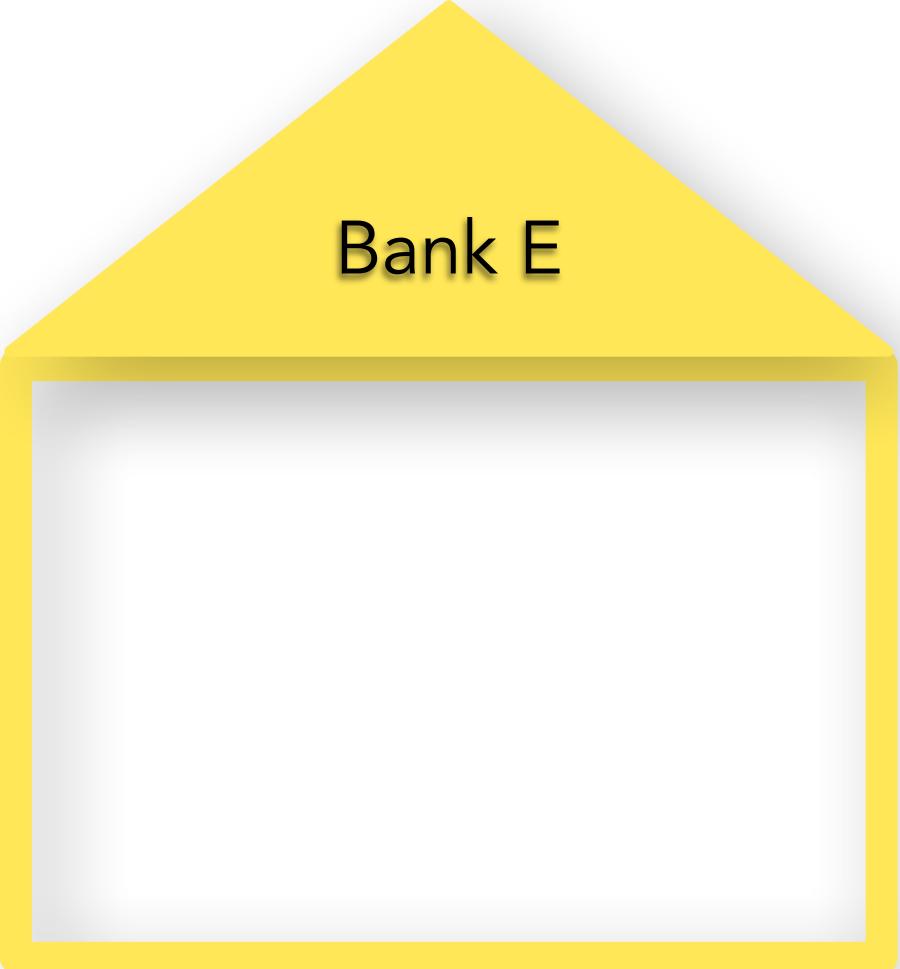
$$D = 0.9 * 3,000$$



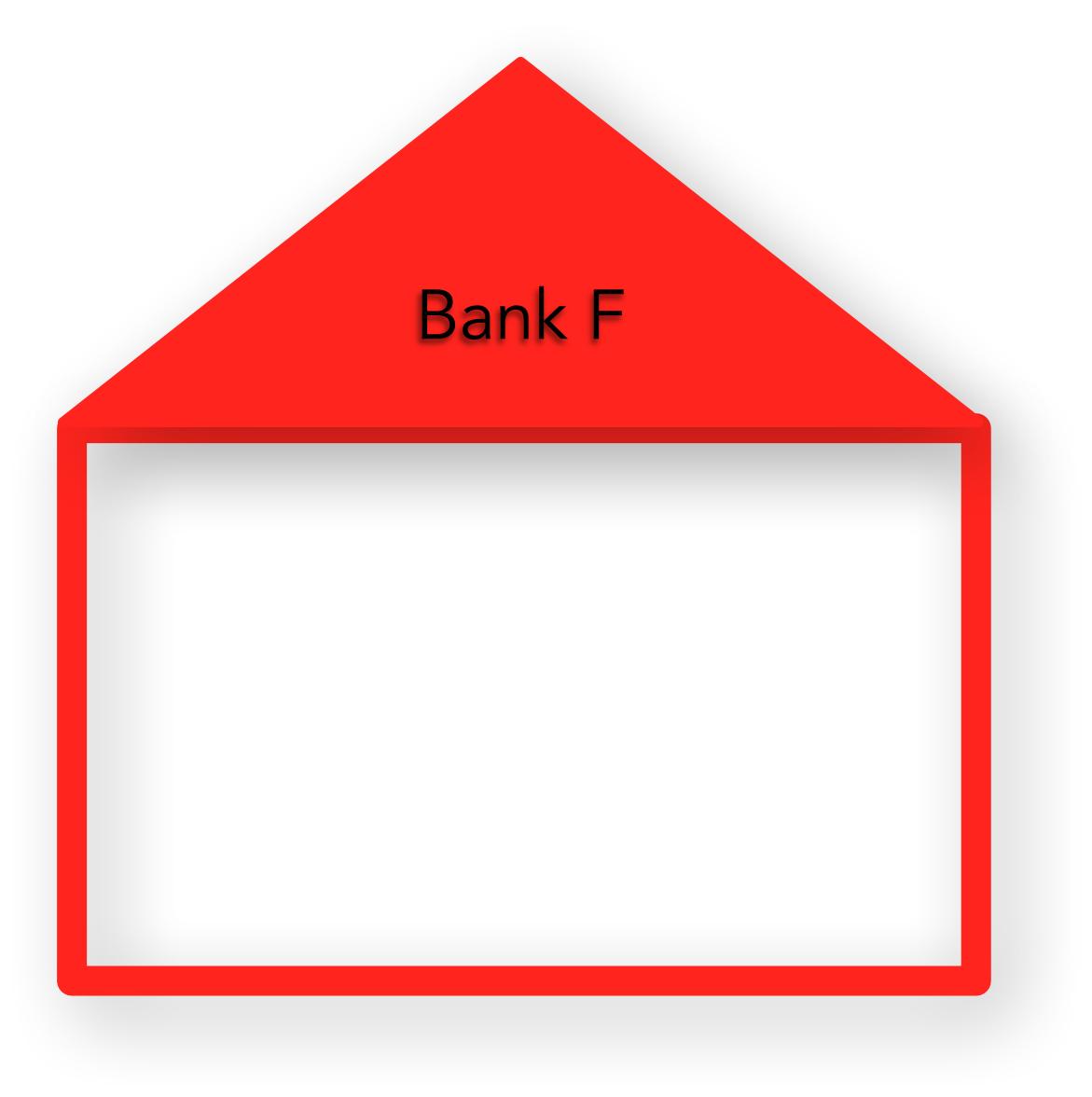
Bank C



**Bank D**



Bank E

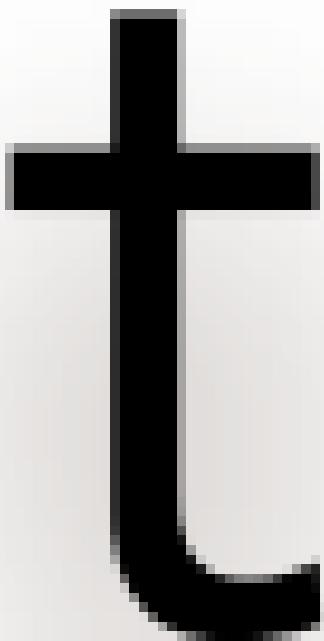


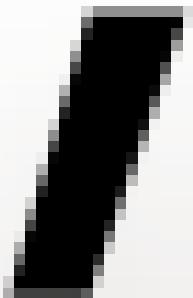
A red house outline with a white interior. The roof is red with a white shadow. The base of the house is a thick red border. The text "Bank F" is centered inside the house.

Bank F





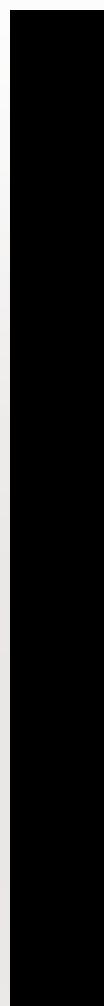






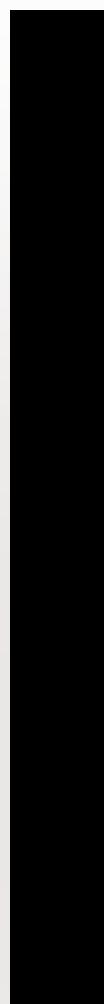


g

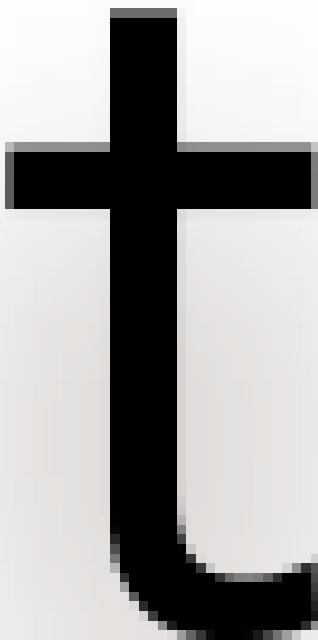




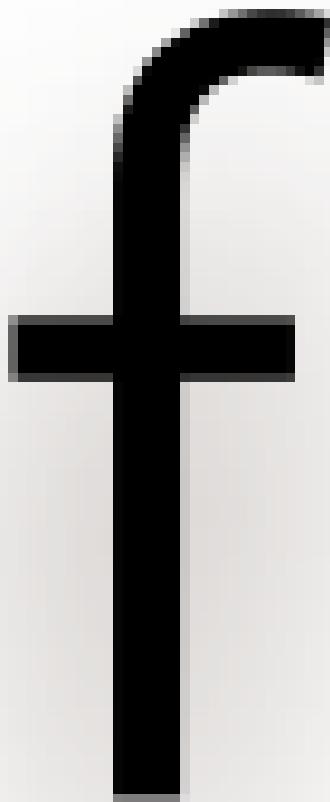
U

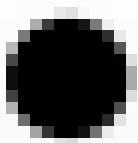


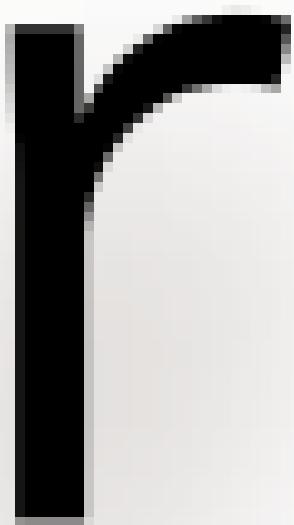
g



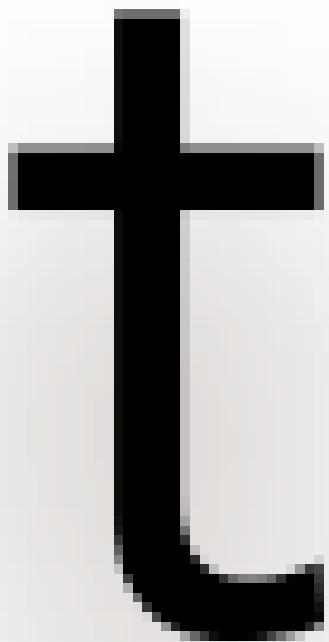






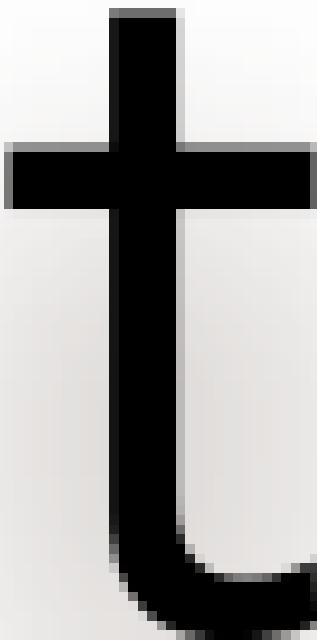


S



T





g



r





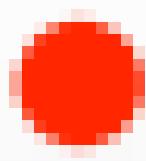


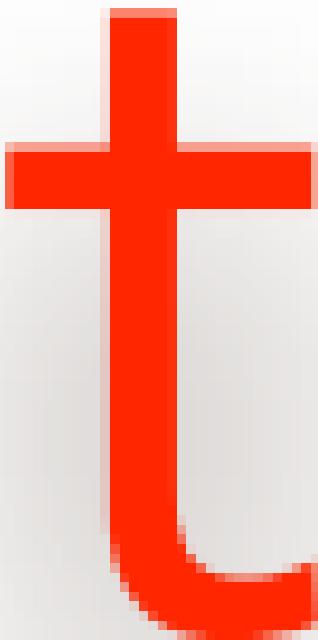


ρ



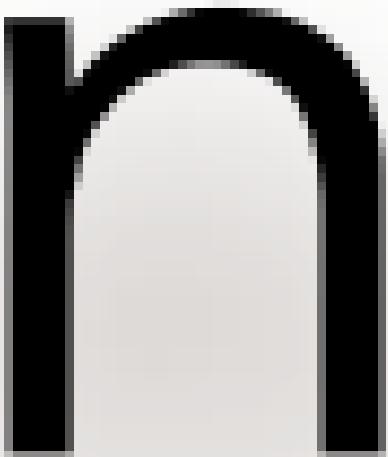




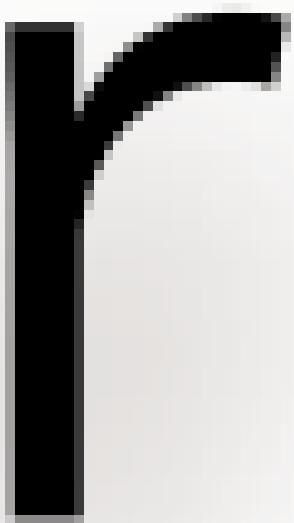




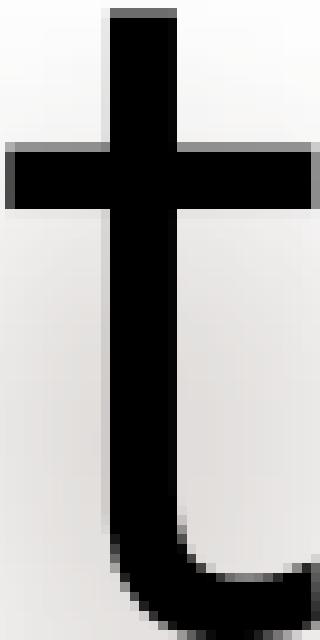
q







g

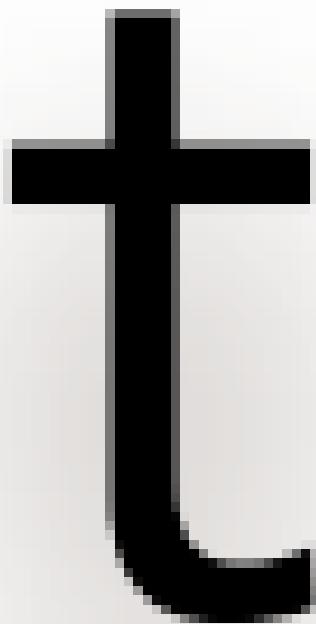


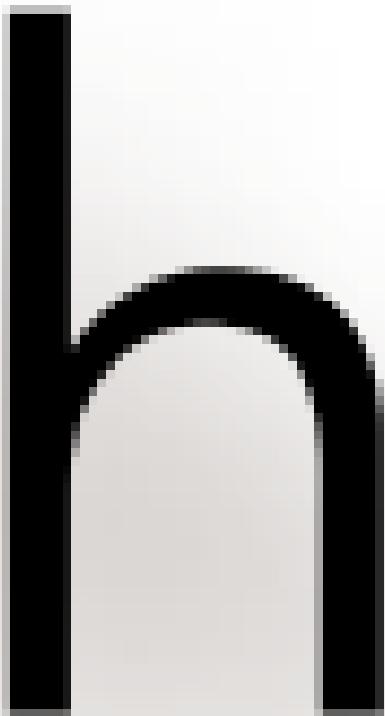


ai

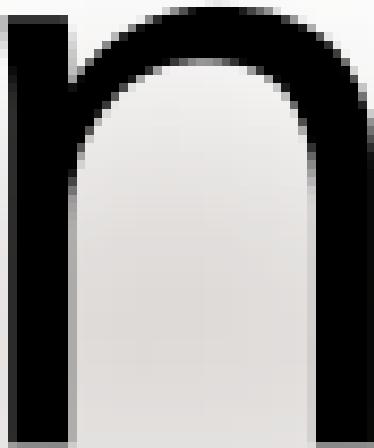
b

Y













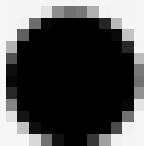
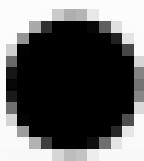




m



Y



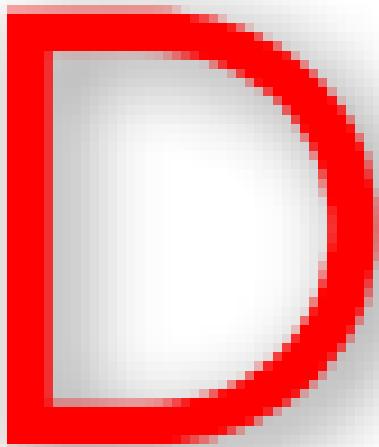




D = 3,000 b

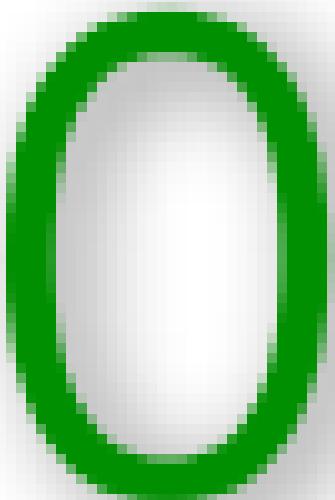
$$L = 0.9 * 0.9 * 3,000$$

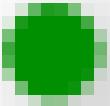
$$D = 0.9 * 0.9 * 3,000$$

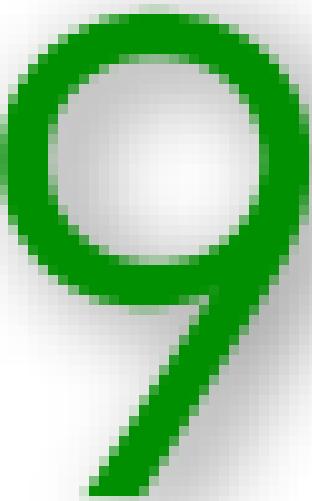


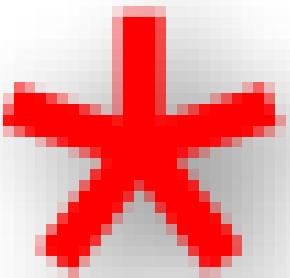




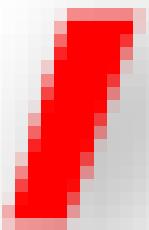


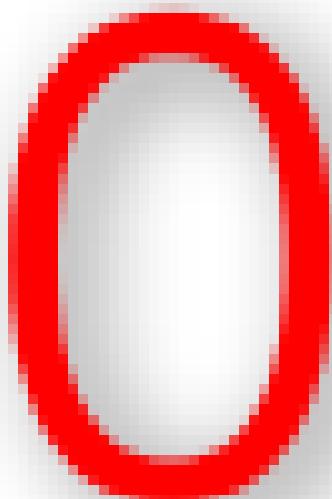


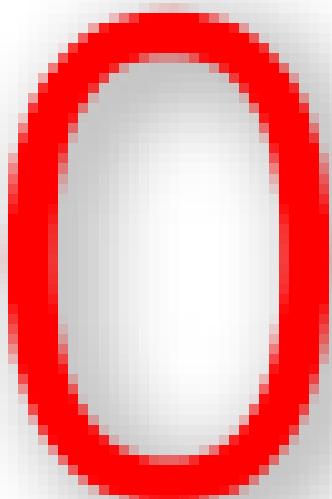


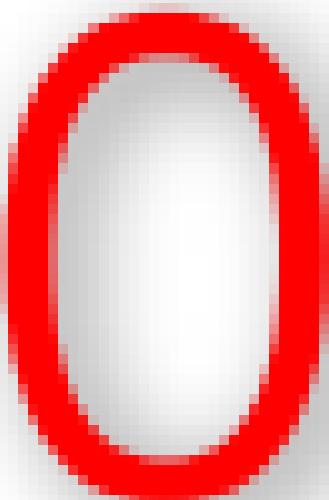


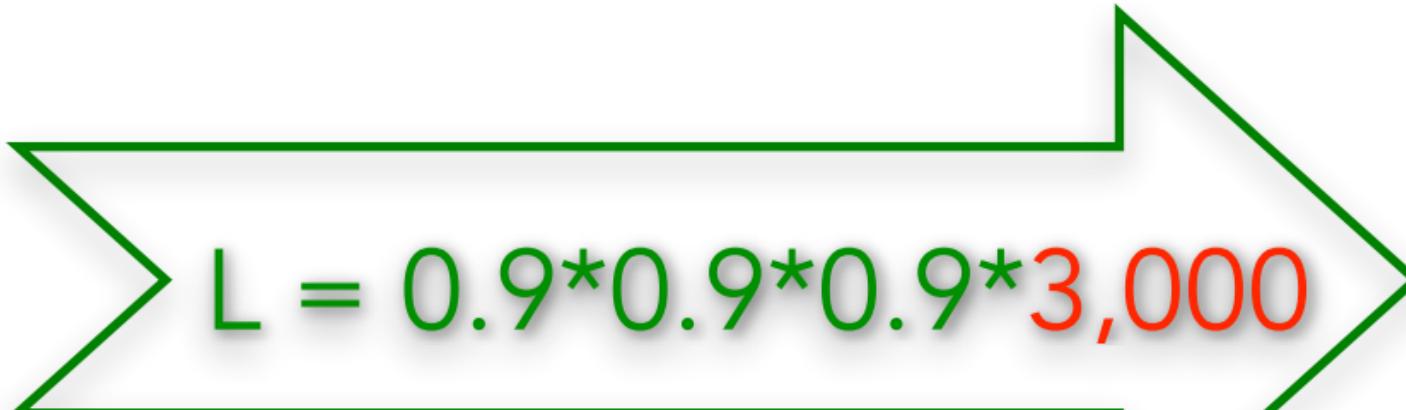
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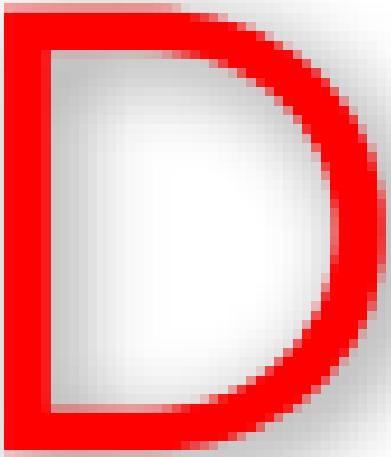




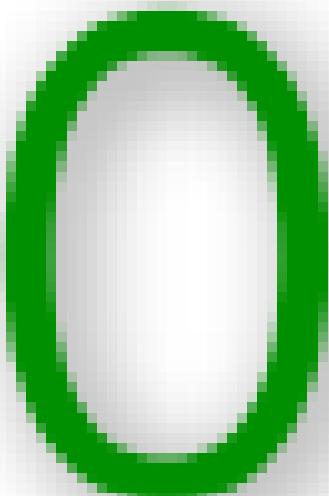


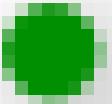

$$L = 0.9 * 0.9 * 0.9 * 3,000$$

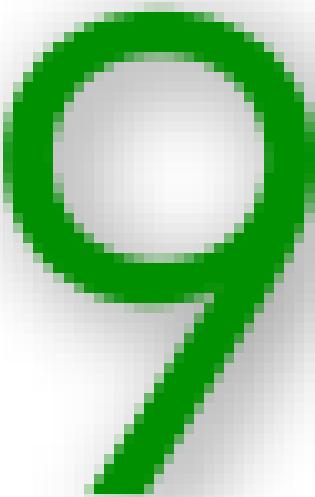

$$D = 0.9 * 0.9 * 0.9 * 3,000$$

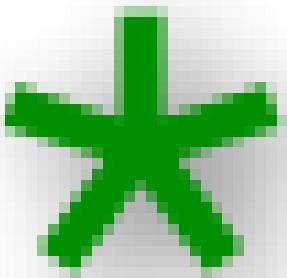


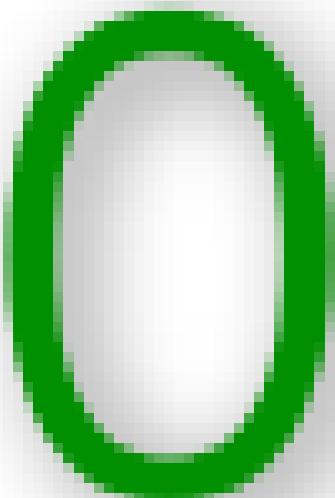


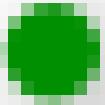


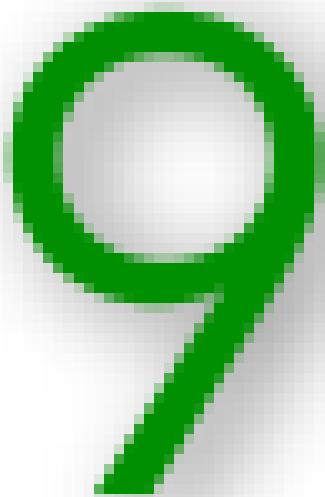


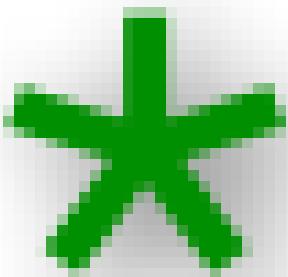




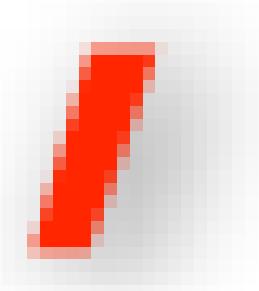


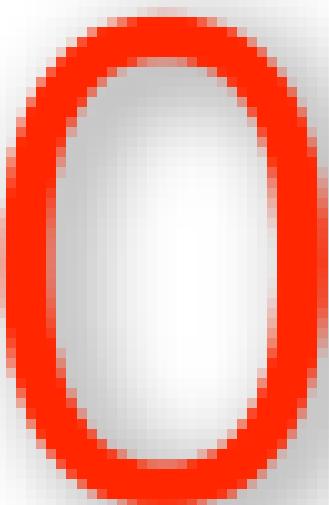


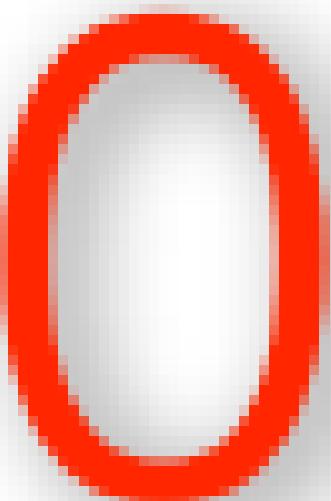


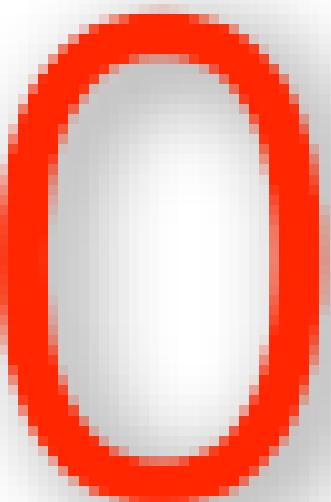


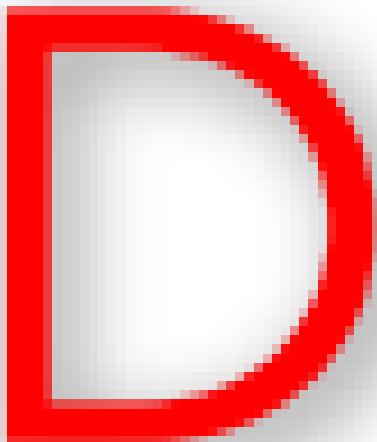
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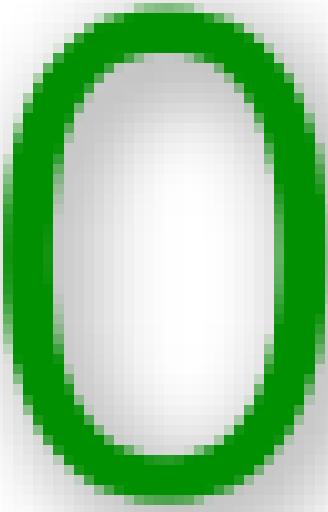


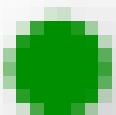


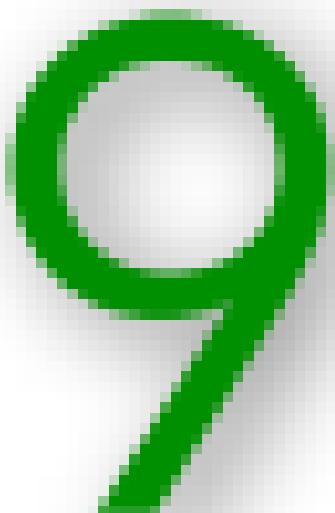




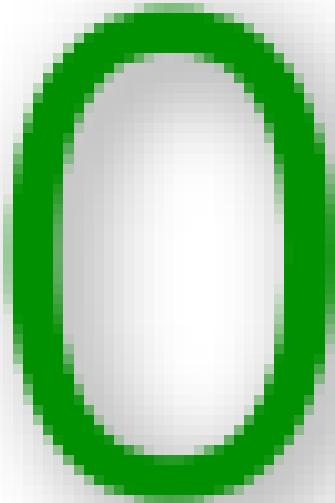


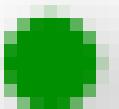






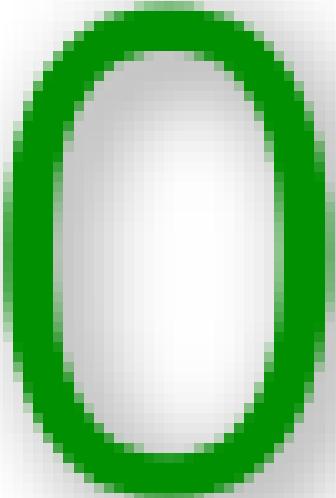


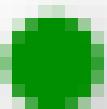


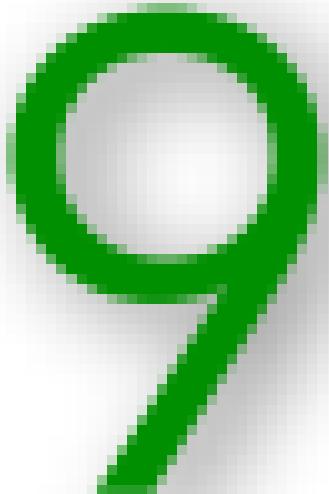


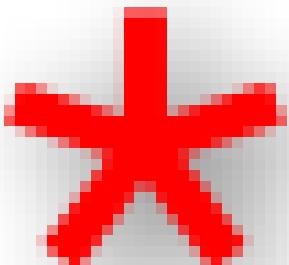
9



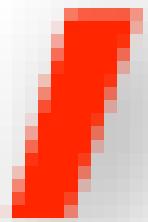


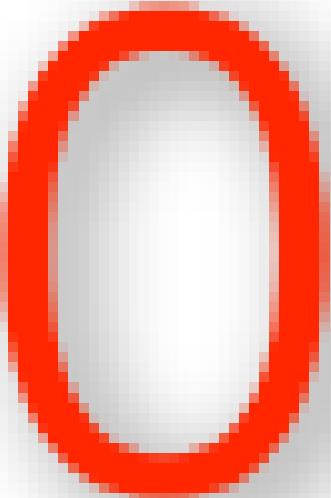


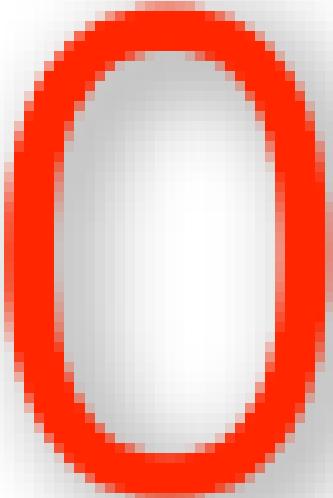


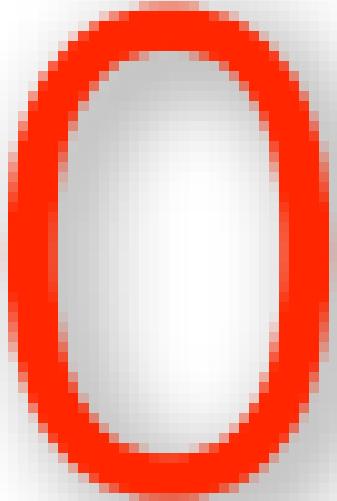


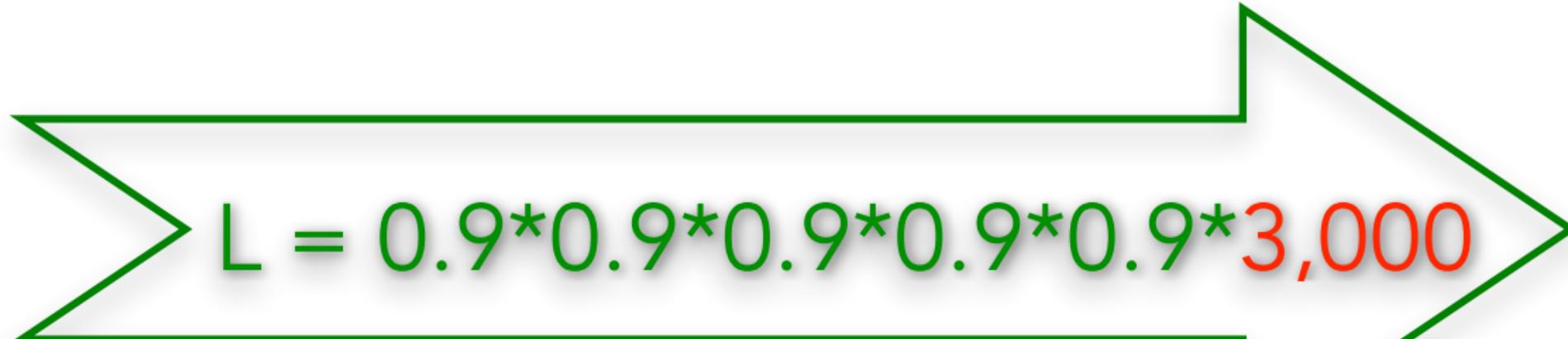
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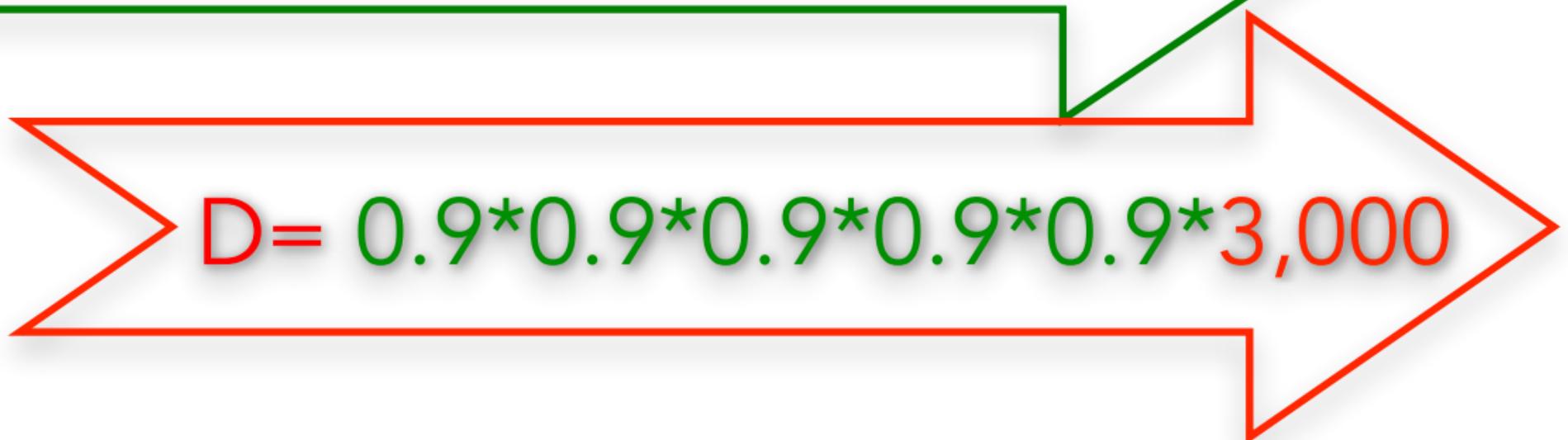




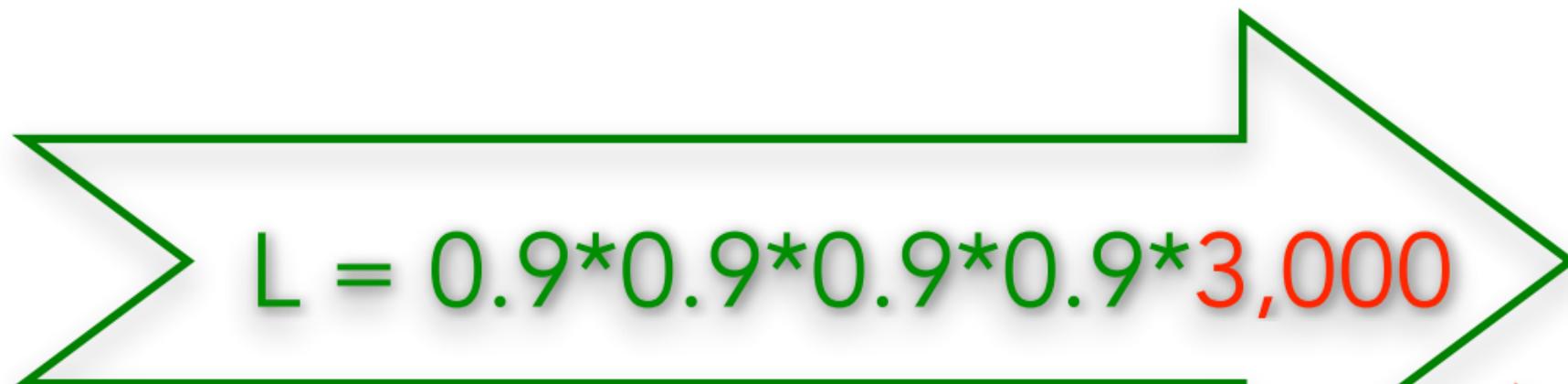


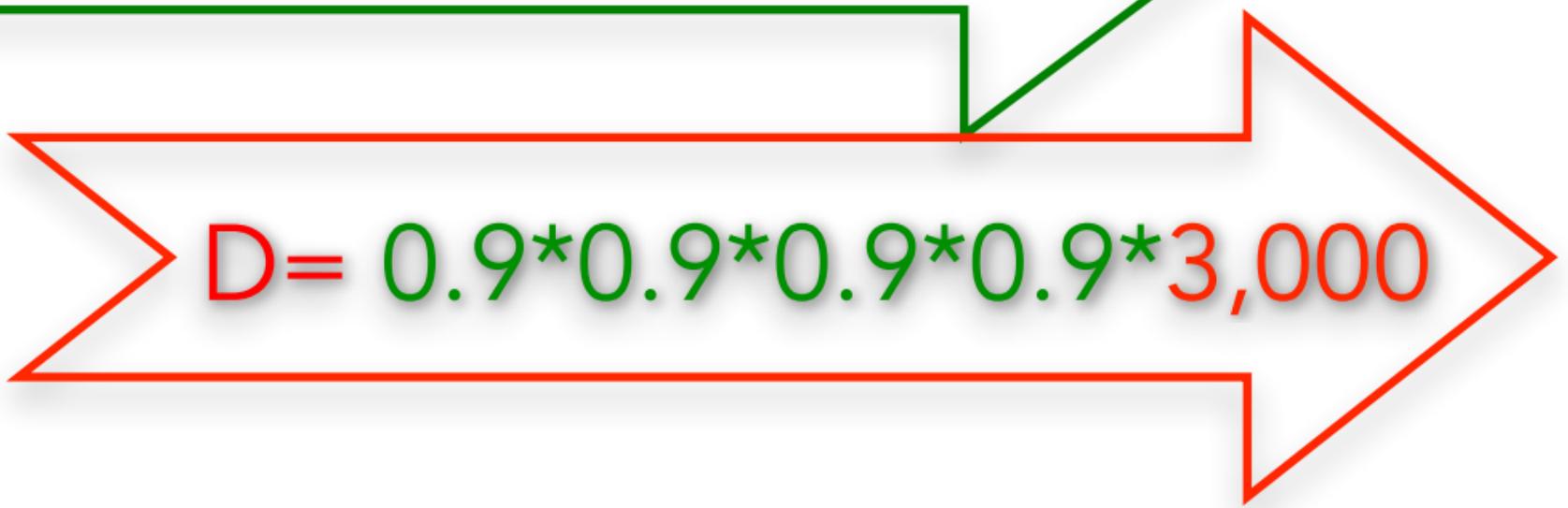



$$L = 0.9 * 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$


$$D = 0.9 * 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$

$$D = 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$


$$L = 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$


$$D = 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$

$$D = 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$

3,100,000

+ 0.9 \* 3,000



Loans become  
Deposits

+

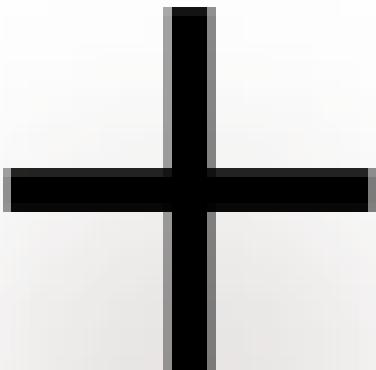
0.9 \* 0.9 \* 3,000

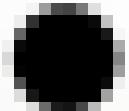
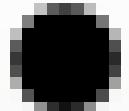
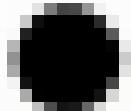
+

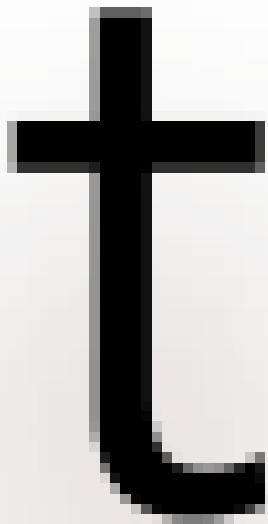
$$0.9 * 0.9 * 0.9 * 3,000$$

$$+ 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$

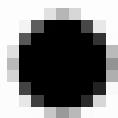
$$+ 0.9 * 0.9 * 0.9 * 0.9 * 0.9 * 3,000$$





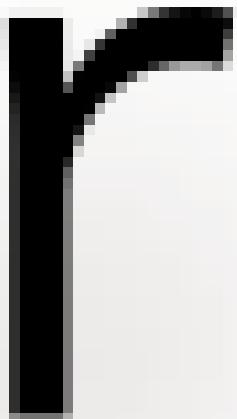


h



S

p







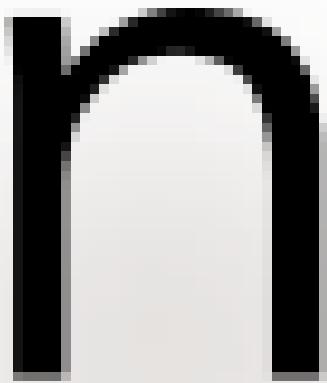


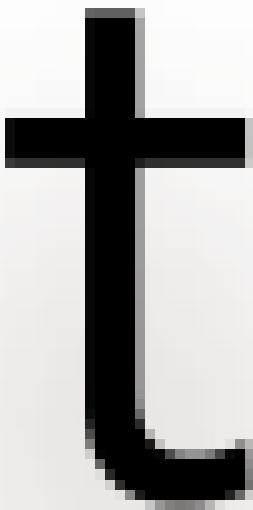
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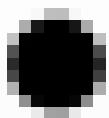
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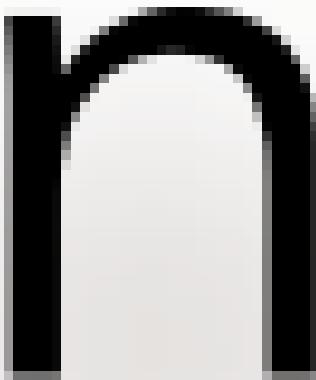


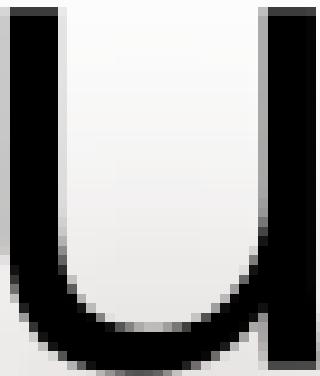






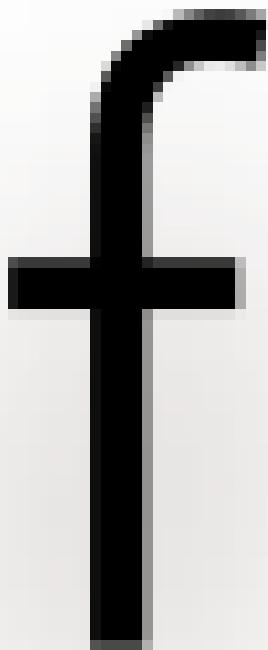




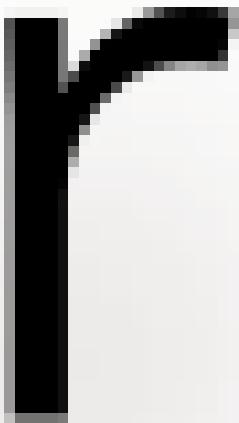




S





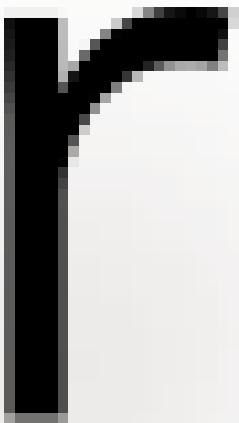


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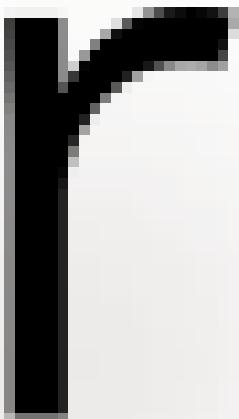
V



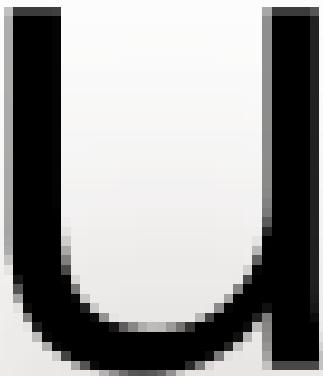


a





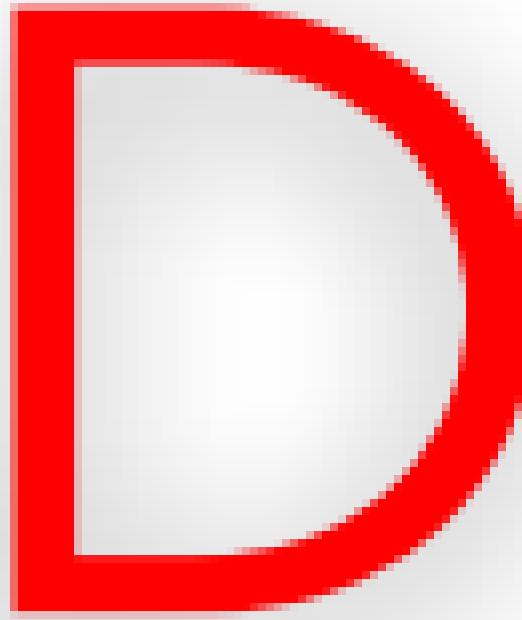






d

S



Total new  
Deposits in all  
checking accounts













A

D

E

facto<sup>r</sup> 3,000

3,000,000  
1

+

0.9

+

$$0.9 * 0.9$$

+

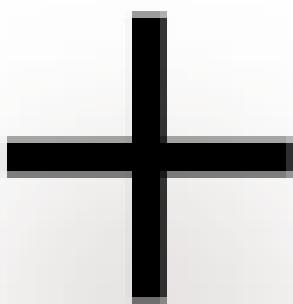
0.9 \* 0.9 \* 0.9

+

0.9 \* 0.9 \* 0.9 \* 0.9

+

$0.9 * 0.9 * 0.9 * 0.9 * 0.9 * 0.9$





3,000,000  
1

+

0 . 9

$+ 0.9^2$

+

...

...

...

0

.

9

n)

**+ 0.9<sup>3</sup>**

$+ 0.9^4$

**+ 0.9<sup>5</sup>**

+ 0.9<sup>6</sup>

$\Delta D = 3,000$

$$\frac{1}{1 - 0.9}$$

$\Delta D = 3,000 \text{ (10)}$

ADG=30,000 billion

A **3,000** injection of new money into the banking system, has the potential to increase total balances in deposit accounts by **30,000 billion**

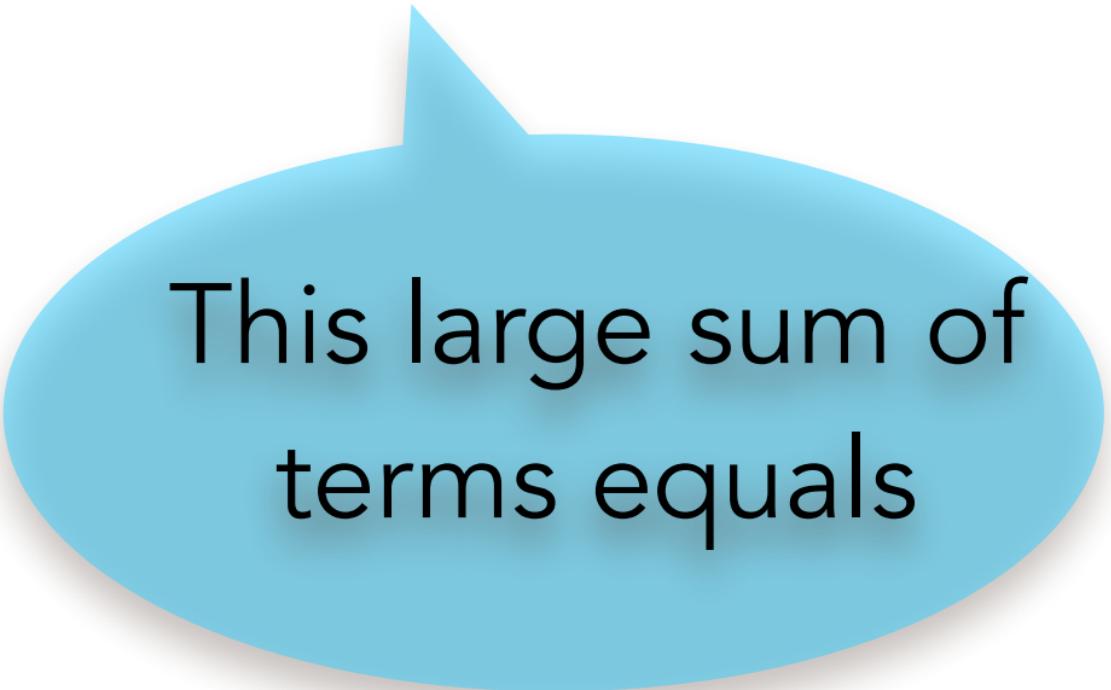


Is that a lot?

Banks are  
allowed to lend  
**90%** of Deposits

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This large sum of  
terms equals

Let's calculate first Total new Deposits generated by the new money:  $\Delta D$

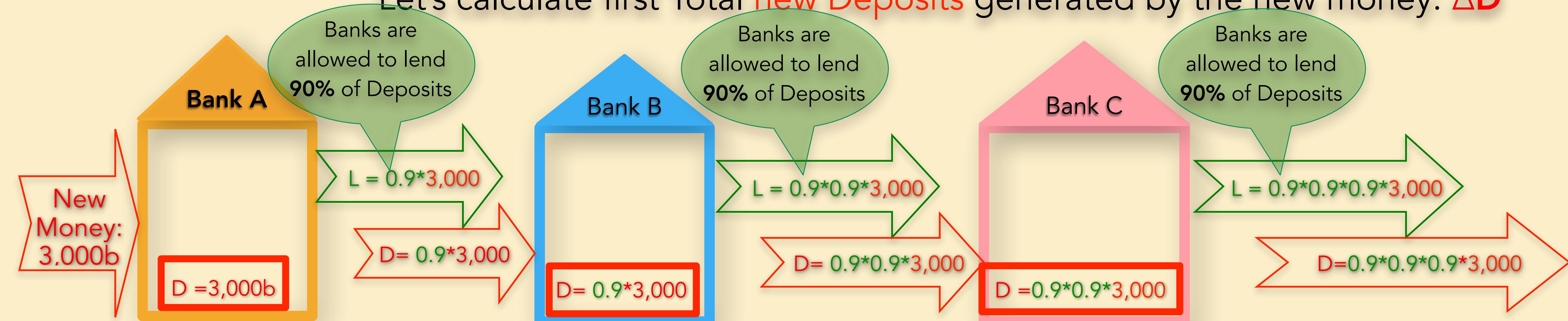
$$D = 0.9 \times 3,000$$

$$D = 0.9 \times 0.9 \times 3,000$$

$$D = 0.9 * 0.9 * 0.9 * 3,000$$

+...this process continues for several rounds.

Let's calculate first Total new Deposits generated by the new money:  $\Delta D$



**Total new Deposits in all checking accounts**  $\Delta D = 3,000 + 0.9 * 3,000 + 0.9 * 0.9 * 3,000 + 0.9 * 0.9 * 0.9 * 3,000 + 0.9 * 0.9 * 0.9 * 0.9 * 3,000 + 0.9 * 0.9 * 0.9 * 0.9 * 0.9 * 3,000 + \dots$  this process continues for several rounds

$$\text{Factor out } 3,000 \quad \Delta D = 3,000 (1 + 0.9 + 0.9 * 0.9 + 0.9 * 0.9 * 0.9 + 0.9 * 0.9 * 0.9 * 0.9 + 0.9 * 0.9 * 0.9 * 0.9 * 0.9 + \dots)$$

$$\Delta D = 3,000 (1 + 0.9 + 0.9^2 + 0.9^3 + 0.9^4 + 0.9^5 + 0.9^6 + \dots 0.9^n)$$

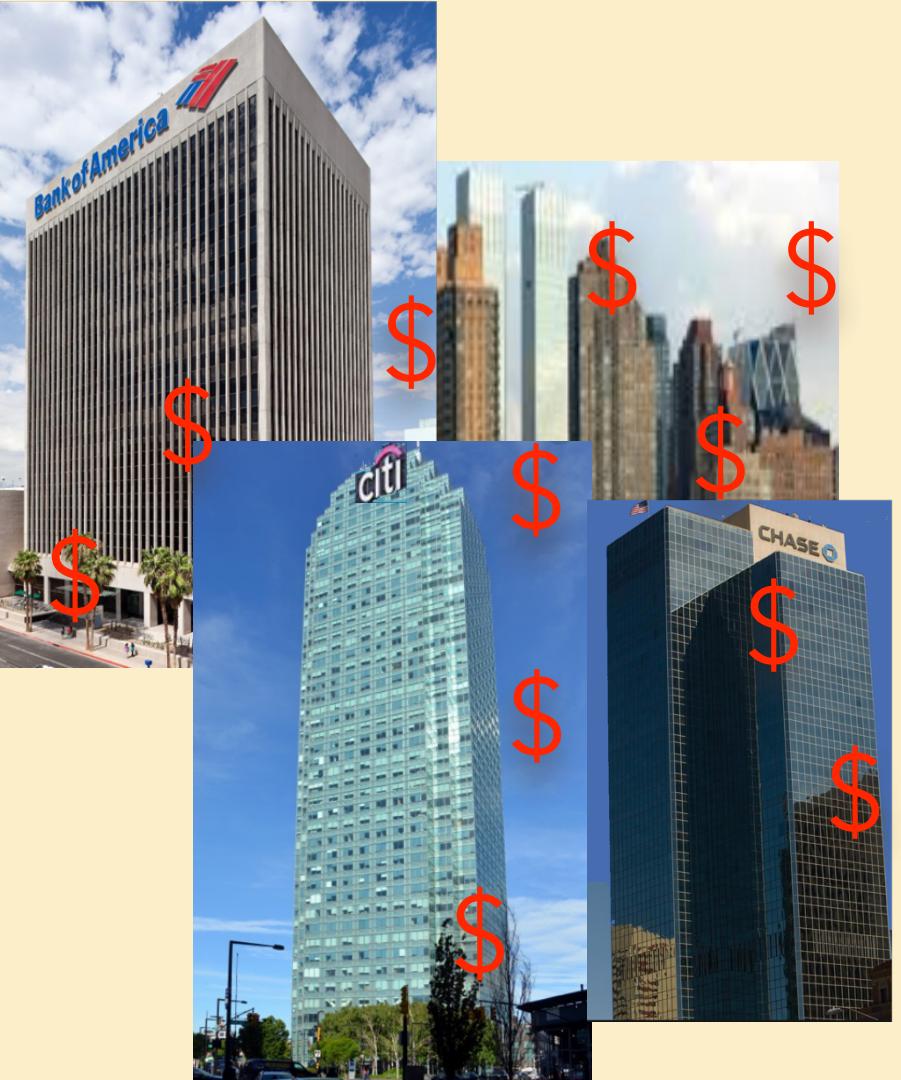
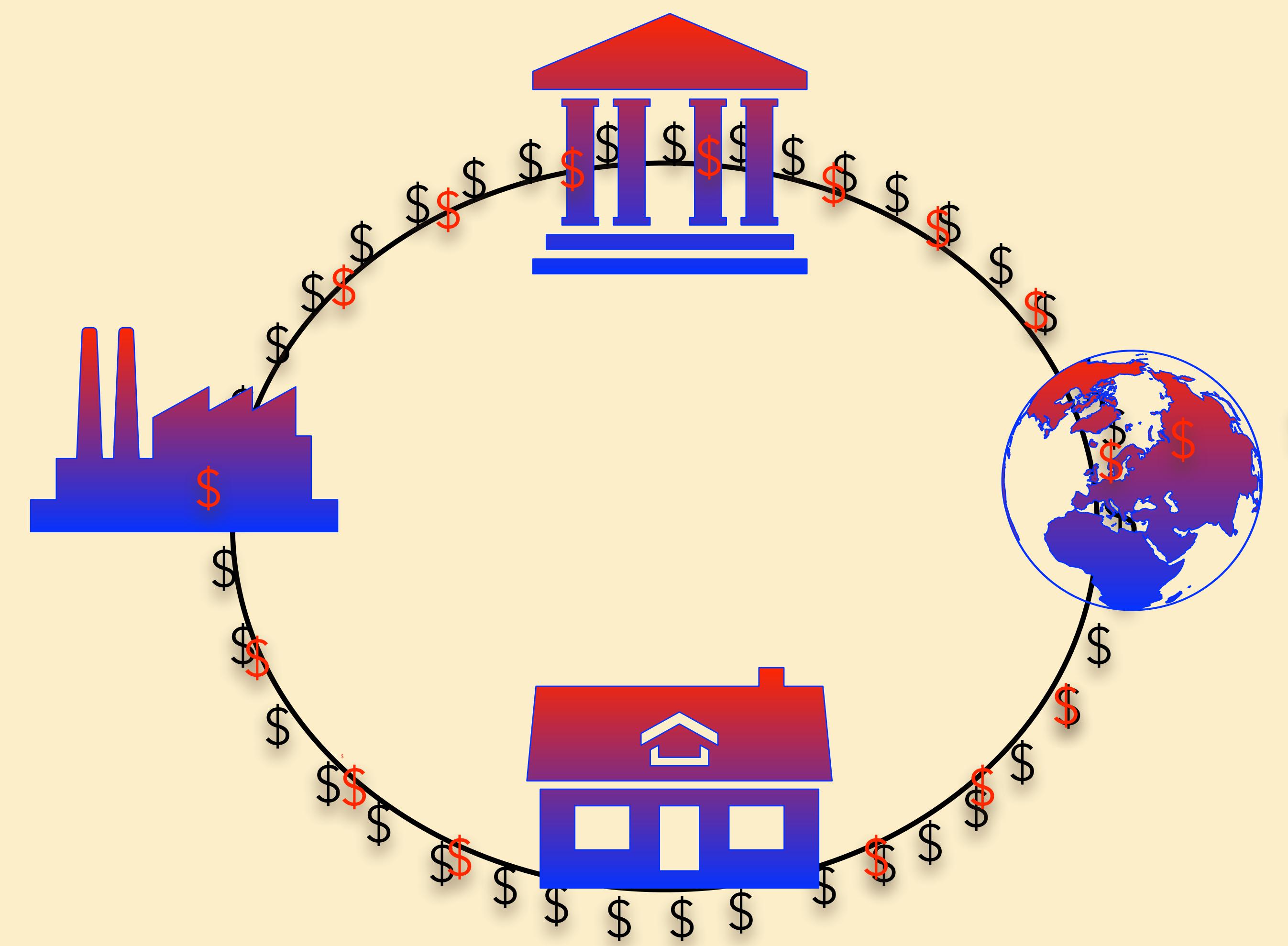
$$\Delta D = 3,000 \left( \frac{1}{1 - 0.9} \right)$$

$$\Delta D = 3,000 (10)$$

$$\Delta D = 30,000 \text{ billion}$$

Is that a lot?

A 3,000 injection of new money into the banking system, has the potential to increase total balances in deposit accounts by 30,000 billion



The Federal Reserve  
Bank creates new money

