

$$1. \begin{pmatrix} 0.7 & 0.6 \\ 0.3 & 0.4 \end{pmatrix} \begin{pmatrix} 0.7 & 0.6 \\ 0.3 & 0.4 \end{pmatrix}$$

$$\begin{pmatrix} (0.49 + 0.49) & (0.42 + 0.24) \\ (0.21 + 0.12) & (0.18 + 0.16) \end{pmatrix}$$

$$\begin{pmatrix} 0.67 & 0.66 \\ 0.33 & 0.34 \end{pmatrix} = M^2$$

$$\begin{pmatrix} 0.67 & 0.66 \\ 0.33 & 0.34 \end{pmatrix} \begin{pmatrix} 0.7 & 0.6 \\ 0.3 & 0.4 \end{pmatrix}$$

$$\begin{pmatrix} 0.667 & 0.666 \\ 0.333 & 0.334 \end{pmatrix} = M^3$$

An apple on wednesday is 0.999

$$\begin{pmatrix} 0.667 & 0.666 \\ 0.333 & 0.334 \end{pmatrix} \begin{pmatrix} 0.7 & 0.6 \\ 0.3 & 0.4 \end{pmatrix} =$$

$$\begin{pmatrix} 0.6667 & 0.6666 \\ 0.3333 & 0.3334 \end{pmatrix} = M^4$$

2. A banana on wednesday is 0.334

$$3. \begin{pmatrix} 0.5 & 0 & 0.5 \\ 0.0 & 0.8 & 0.2 \\ 0.3 & 0.4 & 0.3 \end{pmatrix}$$

When we put this to the power of 5  
we get

$$\begin{pmatrix} 0.2336 & 0.4528 & 0.3136 \\ 0.13584 & 0.60288 & 0.26128 \\ 0.18416 & 0.52256 & 0.28928 \end{pmatrix}$$

apple - 0.2336  
banana - 0.4528  
cake - 0.3136

0.3136