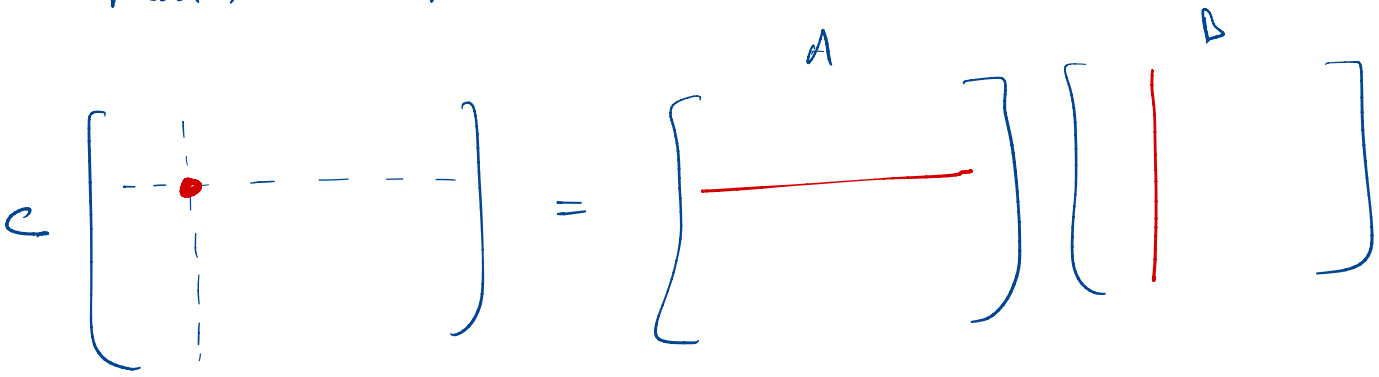
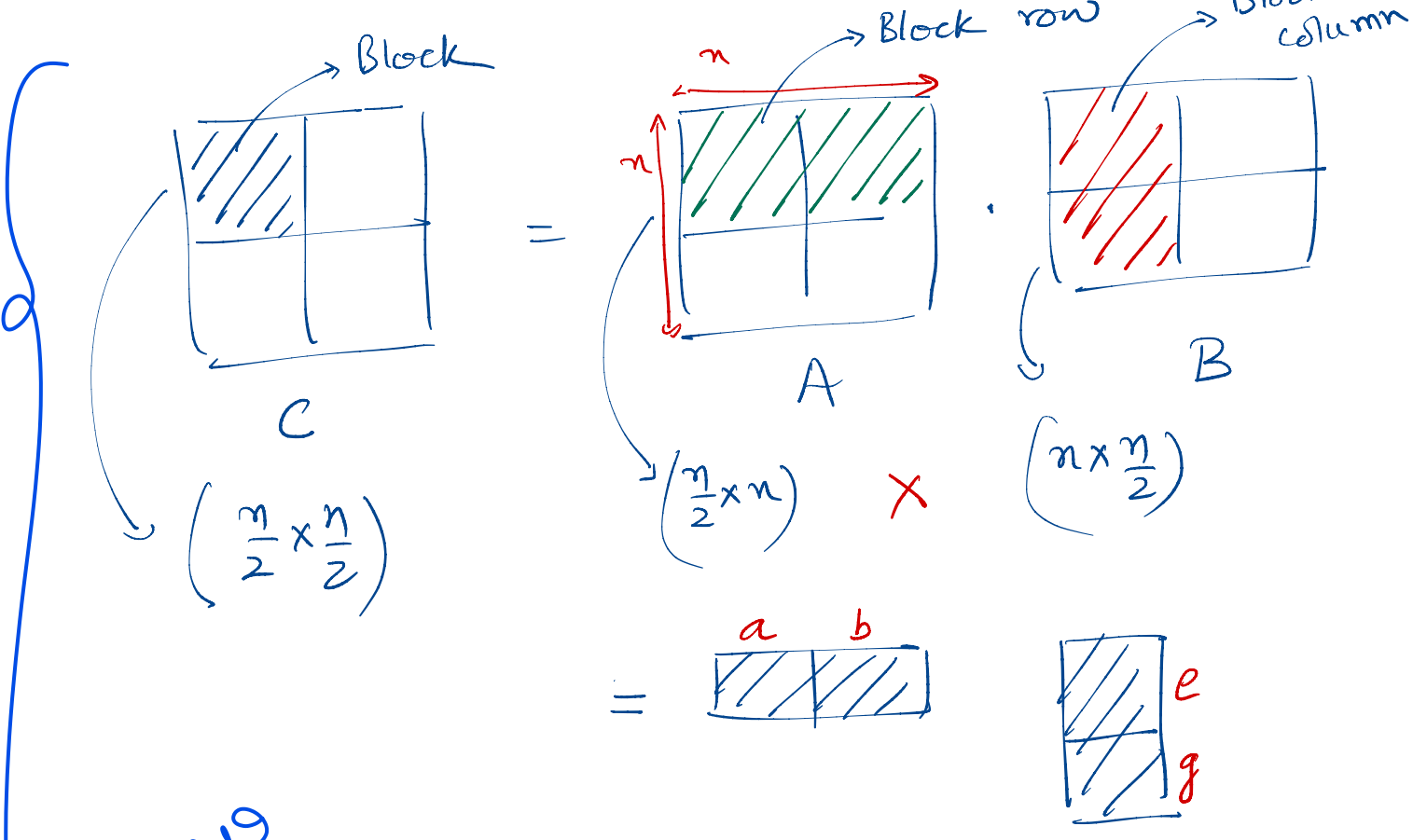
Matrix Multiplication

Matrix multiplication seen as dot products:



Block matrix multiplication



$$T(n) = 8\,T\left(\frac{n}{2}\right) + \theta(n^2)$$

$n^{\log_b a}$ $\quad a = 8$ $\quad b = 2$ $\quad \log_b a = \log_2 8 = 3$

$\rightarrow n^3$

$f(n) = n^2$

Case I applies

$\Rightarrow \quad T(n) = \theta(n^3)$