Ex. 1
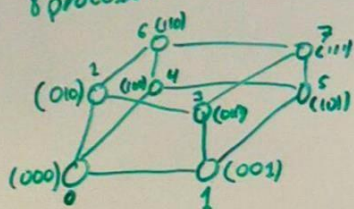
a) Represent topology as graph $G = (V, E)$

8 processor

b) Calc max steps between any two processors

$\log_2(8) = 3$

c) Compare with ring of fire

$\frac{P}{2} = 4$; $4 > 3$ "

Ex. 2 $M = 100$, $P = 16$, $t_s = 2$ units, $t_w = 1$ unit, (4×4) grid
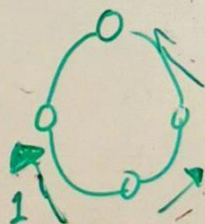
a) $T = (t_s + t_w M) \log_2 P = 408$

Slide 16

b) Hyper cube
$T = (t_s + t_w M) \log_2 P = 4 \cdot 102 = 408$
$\log_2(16) = 4$

Ex. 4 16 elements, $P = 4$, $A = [3, 6, 1, 5, 7, 4, 2, 9, 8, 3, 5, 1, 4, 2, 6, 7]$

a) Describe steps scatter operation in ring topology

16 operations if only one at a time

12 operation if send and receive same time

12 if 2 cores send 2 at time

8 if 2 cores and send and receive