Notes working out the solution for example problems from Lectures 32 & 33.

Page size is 64 bytes so VPO & PPO are both $\log_2(64) = 6$ bits

Memory reference: Virtual address 0x0354

14 bit Virtual Address = 00 0011 01 01 0100

VPN = 0x0D

VPO = 0x14

Looking up TLB with VPN:

0000 11 01 = TLB hit, PPN is 2D (hex)

TLB Tag = 0x03

TLB index = 0x1

So, Physical Address is

PPN + PPO (But PPO is same as VPO)

= 0010 1101 | 01 0100

PPN | PPO

= discarding most significant zero bits to get the 12 bit physical address

1011 01 01 0100 = 0xB54

L1 Tag = 0x2D | L1 set index = 0x5 | L1 offset = 0x0

Looking up the L1 cache, we get the 1 byte word 0x36 with a L1 cache hit.