

M 408D

HW #4, PART III SOLUTIONS:

$$A) \frac{(8!)(5!)}{(7!)(4!)} = \frac{8 \times (7!) \times 5(4!)}{(7!) \times (4!)} = 8 \times 5 = \underline{40}$$

$$B) \frac{(12!)(0!)}{(10!)} = \frac{12 \times 11 \times (10!) \times 1}{(10!)} =$$
$$= 12 \times 11 = \underline{\underline{132}}$$

$$C) \frac{(n+2)!}{(n-1)!} = \frac{(n+2)(n+1)(n)(n-1)!}{(n-1)!} = \underline{\underline{(n+2)(n+1)(n)}}$$

$$D) \frac{(n!)(n+4)!}{((n+2)!)(n-2)!} = \frac{n \times (n-1) \cancel{(n-2)!} [(n+4)!]}{\cancel{(n-2)!} ((n+2)!)} =$$

$$= \frac{n \times (n-1) [(n+4)(n+3)(n+2)!]}{(n+2)!}$$

$$= n \times (n-1)(n+4)(n+3)$$

$$= \underline{\underline{(n+4)(n+3)(n)(n-1)}}$$
