

Quiz 1

1. (a) We did problems like this in § 8:

$$\frac{30}{T} \frac{29}{V} \frac{28}{S} \Rightarrow \frac{30!}{27!} = P(30, 3) = 30_3$$

$$(b) \quad \frac{20}{T} \cdot \frac{19}{V} \cdot \frac{10}{S} = 20_2 \cdot 10_1 \\ = P(20, 2) \cdot P(10, 1)$$

(c) committee of 8 = subset size 8 \Rightarrow

$$\binom{30}{8} = C(30, 8)$$

$$(d) \quad \binom{20}{5} \binom{10}{3} = C(20, 5) \cdot C(10, 3) \\ \text{women men}$$

$$2. \quad \binom{6}{4} = \frac{6!}{(6-4)! \cdot 4!} = \frac{6!}{2! \cdot 4!} =$$

$$\frac{6 \cdot 5 \cdot \cancel{4} \cdot \cancel{3} \cdot 2 \cdot 1}{2 \cdot 1 \cdot \cancel{4} \cdot \cancel{3} \cdot 2 \cdot 1} = \frac{30}{2} = 15$$