2.2

2:

$$4 * 2 * 3 = 24$$

4:

$$2 * \ _{18}C_9 = 2 * \frac{18!}{9! * (18 - 9)!}$$
$$= 2 * 48620$$
$$= 97240$$

6:

$$_{10}P_3 = \frac{10!}{(10 - 3)!}$$
$$= 720$$

10:

$$_{18}C_6 = \frac{18!}{6! * (18 - 6)!}$$
$$= 18564$$
$$\Rightarrow$$
$$_{18564}C_3 = \frac{18564!}{3! * (18564 - 3)!}$$
$$= 1066088460164$$

12:

$$_{12}C_2 = 66$$
$$_6C_2 = 15$$
$$_4C_2 = 6$$
$$P(socksmathc) = \frac{15 + 6}{66} = \frac{1}{3}$$