

Homework 1

$$1) 250C_2 = 31,125$$

$$2) 5C_3 = \frac{5!}{3!(5-3)!} = 10$$

$$3) 2 \times 2 \times 2 = 2^3 = 8$$

$$4) 30P_3 = \frac{30!}{(30-3)!} = 24,360$$

$$5) 6C_3 = \frac{6!}{3!(6-3)!} = 20$$

$$6) \left(\frac{5}{6}\right)^3 = \frac{125}{216} = 0,5787$$

$$1 - \frac{125}{216} = \frac{91}{216} = 0,42129$$

$$7) (4C_2) * (2C_1) + (4C_3) = 16$$

$$8) a) 2^5 = 32, \quad 32 * 20C_9 = 32 * \frac{20!}{(9! * 11!)}$$

$$= 5,374,720$$

b)

$$2C_2 = 1$$

$$1 * 19C_4 * 15C_2 = 1 * 38,760 * 105 = 4,069,880$$