Kelly Williams

Problem 7

$$P(1\text{pair}) = \frac{\binom{13}{1}\binom{4}{2}\binom{12}{2}\binom{4}{1}\binom{4}{1}}{\binom{52}{4}} = 30.42\%$$

$$P(2\text{ pair}) = \frac{\binom{13}{2}\binom{4}{2}\binom{4}{2}}{\binom{52}{4}} = 1.037\%$$

$$P(3\text{ kind}) = \frac{\binom{13}{1}\binom{4}{3}\binom{12}{1}\binom{4}{1}}{\binom{52}{4}} = 0.92\%$$

$$P(4\text{kind}) = \frac{\binom{13}{1}\binom{4}{4}}{\binom{52}{4}} = 0.0048\%$$