1. $6 \times 6 = 36$ different arrangements

2. a. $8! = 40320$

b. - permutations for ordering of each couple
- binary counting for left-right of each couple
$4! \cdot 2^4 = 384$

c. $4! = 24$

3. a. - each question has 4 possible answers
- in total there are $4^5 = 1024$ possible submissions

b. $\binom{5}{4}\left(\frac{3}{4}\right)^5 = 23.7\%$

4. total possibilities: 256
correct: $\binom{8}{4} = \frac{8!}{4!(8-4)!} = 70$

$$\text{probability} = \frac{70}{256} = 27.34\%$$

5. a. total outcomes: $6^2 = 36$
successful outcomes: 5
probability: $5/36 = 13.8\%$

44
53
35
26
62

b. successful outcomes: 8
probability: $8/36 = 22.2\%$

11
12
21
22
31
32
13
23

6. a. $6! = 720$

b. 50% as either could be any order in equal frequency

7. ${}_6P_4 = 360$

8. a. $\frac{4^5}{\binom{52}{5}} = \frac{1024}{2598960} = 0.0394\%$

b. $13 \cdot \alpha = 0.512\%$
→ 12 suites, cyclic

9. a. $0.7 \cdot 0.4 = 0.28$

b. $(1-0.7)(1-0.4) = 0.18$

10. a. $54 + 69 - 35 = 88\%$

b. $100 - 88 = 22\%$

c. $69 - 35 = 34\%$