(1) $\boxed{3} \times \boxed{2} = 6$

# of options from Frederick to Baltimore

# of options from Baltimore to London

(3) $\boxed{49} \times \boxed{48} \times \boxed{47}$

# of options for 1st place

# of options for 2nd place

# of options for 3rd place

$= 110,544$

(9) a) 8 people in total

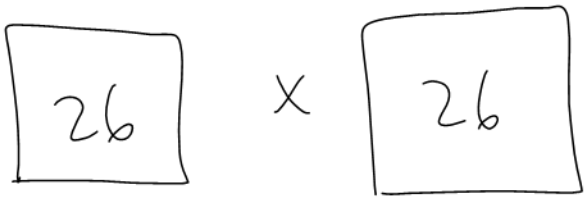
$8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$

$= 40,320$

b) $\boxed{3 \times 2 \times 1} \times \boxed{5 \times 4 \times 3 \times 2 \times 1} = 720$

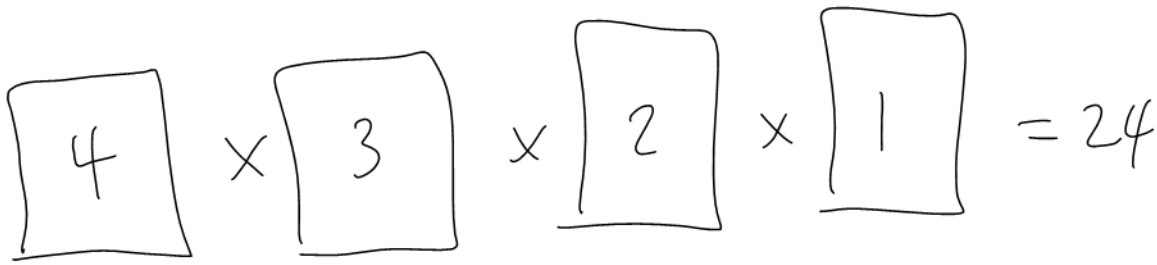
# of options for front row

# of options for back row

(11) 

# of options for 1st letter

# of options for 2nd letter

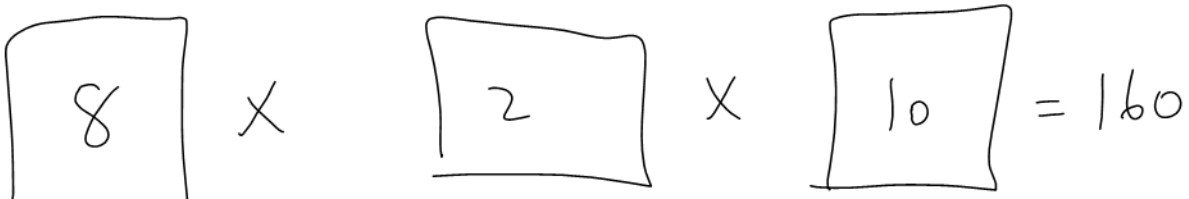
(13) 

# of options for 1st letter

2nd letter

3rd letter

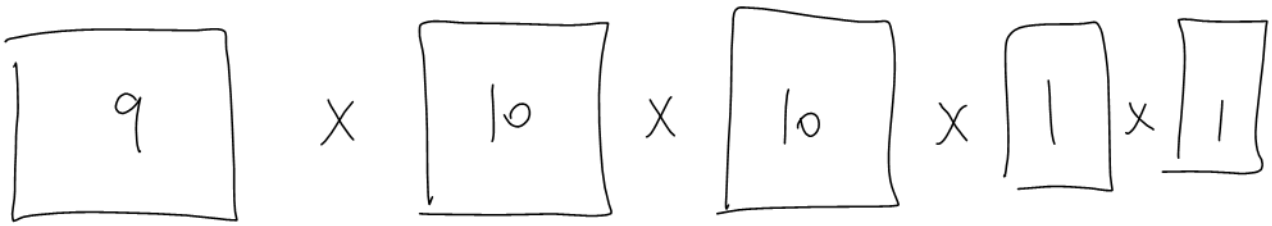
4th letter

(21) 

# of options for 1st digit (2-9)

# of options for 2nd digit (0 or 1)

# of options for 3rd digit (0-9)

(23) 

# of options for 1st digit (1-9)

2nd digit (0-9)

3rd digit (0-9)

4th digit

5th digit

= 900

(25) $26 \times 26 \times 1 \times 1$

# of options for 1st letter | 2nd letter | 3rd letter | 4th letter

$= 676$

(33) $3 \times 6 = 18$

3: # of styles

6: # of colours

(35) $5 \times 4 = 20$

5: # of ways to choose right glove

4: # of ways to choose left glove (can't match the right one)

(37) $\boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{2}$

- $\boxed{2}$: # of options for 1st toss (heads or tails)
- $\boxed{2}$: 2nd toss
- $\boxed{2}$: 3rd toss
- $\boxed{2}$: 4th toss
- $\boxed{2}$: 5th toss
- $\boxed{2}$: 6th toss

$= 64$

(39) $\boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{2}$

- $\boxed{2}$: # of ways to answer 1st question (true or false)
- $\boxed{2}$: 2nd question
- $\boxed{2}$: 3rd question
- $\boxed{2}$: 4th question
- $\boxed{2}$: 5th question

$= 32$

(41) $\boxed{4} \times \boxed{4} \times \cdots \times \boxed{4}$

- $\boxed{4}$: # of ways to answer 1st question (4 possible answers)
- $\boxed{4}$: 2nd question
- $\boxed{4}$: 10th question

$= 4^{10}$

$= 1,048,576$

(55) a) Put 9 players in order

$9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$

$= 362,880$

b) $\square \times \square \times \square \times \dots \times \square \times \boxed{1}$

8 people to choose from

forced (must be the pitcher)

$= (8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1) \times 1$

$= 40,320$

c) $\boxed{1} \times \square \times \square \times \dots \times \square \times \boxed{1} \times \boxed{1}$

forced

6 people to choose from

forced forced

$= 1 \times (6 \times 5 \times 4 \times 3 \times 2 \times 1) \times 1 \times 1$

$= 720$

59) $\boxed{4} \times \boxed{3} \times \underset{3^{rd}}{\boxed{3}} \times \underset{4^{th}}{\boxed{3}} \times \underset{5^{th}}{\boxed{3}} \times \underset{6^{th}}{\boxed{3}}$

# of colors for 1st house

# of colors for 2nd house (must be different than previous house)

$= 972$