

$$\begin{aligned}
 1. \quad & \frac{18!}{12!} \\
 &= \frac{1.2.3.4.5.6...18}{1.2.3.4.5.6...12} \\
 &= 13.14.15.16.17.18 \\
 &= 13366080
 \end{aligned}$$

$$\begin{aligned}
 2. \quad & \frac{7!}{2!5!} \\
 &= \frac{1.2.3.4.5.6.7}{1.2.1.2.3.4.5} \\
 &= \frac{6.7}{1.2} \\
 &= 21
 \end{aligned}$$

3. Using the Basic Rule of Counting

4 vehicles

5 types

7 Colours

$$= \frac{4!5!7!}{3!}$$

=2419200 ways

4. 4 Digits

3 letters

7 slots

Incase the first 5 slots are taken by letters then

$$= {}^7C_4 = 35 \text{ways}$$

$$= 35.26P_5.10.9$$

$$= 2486480000$$

5. 5 letters

$$= 26^5$$

2 digits

$$= 10^2$$

7 slots

$$= {}^7C_5 = 21 \text{ways}$$

$$= 21.26^5.10^2$$

$$= 24950889600$$

6. 12 jury

25members

$$= \frac{25.24..13}{12.11.1.10...1}$$

$$=67603900$$

7. Order of selection

15 people

3 selections

$$=15.14.13$$

$$=2,730$$

8. 52 cards

4 cards taken

$$= \frac{52.51.50.49}{4.3.2.1}$$

$$=254150$$

9. 15 flavours

3 chosen

$$= \frac{15.14.13}{3.2.1}$$

$$=455$$

10. 22 combinations

14 hosen

$$= \frac{22.21.20.19}{4.3.2.1}$$

$$=7315$$