

## Quelques réponses : Thème 13

### 13.1. Le principe de multiplication

Exercice 13.1: 24

Exercice 13.2: a) 256      b) 24

Exercice 13.3: a) 13'440      b) 5'376

Exercice 13.4: 177'147

Exercice 13.5: 2'880

Exercice 13.6: a) 2'340'000      b) 1'920'000

Exercice 13.7: a) 40'320      b) 50'400      c) 16'800

Exercice 13.8: a) 1'296      b<sub>1</sub>) 360      b<sub>2</sub>) 240

Exercice 13.9: 144 (on peut également proposer 72. Voyez-vous pourquoi ?)

Exercice 13.10:  $10^6$

### 13.2. Les permutations

Exercice 13.11: 720

Exercice 13.12: 34'650      3'780

Exercice 13.13: 180

Exercice 13.14: 24

Exercice 13.15: 24

Exercice 13.16: 36

Exercice 13.17: a) 210      b) 40

### 13.3. Les arrangements

Exercice 13.18: 5'040

Exercice 13.19: a) 11'881'376      b) 7'893'600

Exercice 13.20: a) 6'720      b) 6'720

Exercice 13.21: a) 676      b) 677

Exercice 13.22: a) 6      b) 2

Exercice 13.23: 625

Exercice 13.24: 5'040

### 13.4. Les combinaisons

Exercice 13.25: 66

Exercice 13.26: 36

Exercice 13.27: 4'495

Exercice 13.28: 3'780

Exercice 13.29: a) 32      b) 1'008      c) 175'616

Exercice 13.30: a) 3'003      b) 980

Exercice 13.31: a) 8'145'060  
 b) 3'262'623 / 3'454'542 / 1'233'765 / 182'780 / 11'115 / 234 / 1  
 c) 194'130 (donc 194'130 sur les 8'145'060 ce qui ne représente que 2,38% de chance !!)

### 13.5. Permutation - Arrangement - Combinaison lequel choisir ?

Exercice 13.32: a) 1'320      b) 220

Exercice 13.33: a) 220      b) 1'320      c) 1'728

Exercice 13.34: 216 / 72 / 72 / 36

Exercice 13.35: a) 45      b) 21      c) 25

Exercice 13.36: a)  $10^5$       b) 810

Exercice 13.37: a) 40'320      b) 10'080      c) 1'152

Exercice 13.38: 12'600

Exercice 13.39: 420

Exercice 13.40: a) 7'140      b) 24      c) 4'960      d) 2'180      e) 1'984

Exercice 13.41: 31

Exercice 13.42: a) 518'918'400      b)  $2,092 \cdot 10^{13}$       c) 12'870

Exercice 13.43: a) 28'800      b) 100