



# Counting - SOLUTIONS

## 1 Permutations

1. 120
2.
  - i. 5040
  - ii. 2520
  - iii. 210
3. 120
4. 336
5. 120
  - i. 24
  - ii. 24
6. 60
7. 120
8. 50400
9.
  - i. 720
  - ii. 120
  - iii. 120
  - iv. 120
  - v. 360
  - vi. 360
  - vii. 144
10.
  - (a) 720
  - (b) 120
  - (c) 24
  - (d) 360
  - (e) 360
11. 24
  - (a) 12
  - (b) 12
  - (c) 12
12. (a) 5040





- (b) 2160
- (c) 2880
- (d) 720
- (e) 4320

13. 15

14. (a) 1404000  
(b) 5400

15. (a) 5040  
(b) 144

16. (a) 15120  
(b) 12096  
(c) 6048  
(d) 2688

## 2 Combinations

1. 10

2. 210

3. 3268760

4. i. 125970  
ii. 41580  
iii. 38808  
iv. 4620  
v. 5025

5. i. 126  
ii. 60  
iii. 40  
iv. 45

6. i. 210  
ii. 84  
iii. 126  
iv. 56  
v. 28  
vi. 70





- vii. 112
- 7.
  - i. 10
  - ii. 6
- 8.
  - i. 210
  - ii. 28
  - iii. 84
  - iv. 21
- 9. 120
  - i. 10
  - ii. 31
  - iii. 37
  - iv. 83
  - v. 55
- 10.
  - i. 715
  - ii. 180
- 11.
  - i. 210
  - ii. 231
- 12.
  - i. 3003
  - ii. 286
  - iii. 2002
  - iv. 2717
- 13.
  - i. 75
  - ii. 95
  - iii. 145
  - iv. 70
- 14. 15750

