**Answer Key for Practice Questions on Counting (Week 1)**

**Tutorial Questions**

1. (Chp6.1, Q3) See <https://youtu.be/oyjV_00AreA>
   1. 410
   2. 510
2. (Chp6.1, Q23) See <https://youtu.be/27TIT9b-ioQ>
   1. 128
   2. 450
   3. 9
   4. 675
   5. 450
   6. 450
   7. 225
   8. 75
3. (Chp6.1, Q29) See <https://youtu.be/fu6DRm9d_HY>

52,457,600

1. (Chp6.1, Q45) See <https://youtu.be/Y0ygybbsAdY>

60

1. (Chp6.1, Q47) See <https://youtu.be/2994qKcnNxM>
   1. 240
   2. 480
   3. 360
2. (Chp6.3, Q3) See <https://youtu.be/uEweJl1OHjg>

720

1. (Chp6.3, Q13) See <https://youtu.be/H9AQZlSx_g0>

2(n!)2

1. (Chp6.3, Q19) See <https://youtu.be/9jI_AJEpCLw>
   1. 1024
   2. 45
   3. 176
   4. 252
2. (Chp6.3, Q23) See <https://youtu.be/VbPK-Tve_lw>

609,638,400

1. (Chp6.3, Q27) See <https://youtu.be/5t6w7F9bz5Q>
   1. 12,650
   2. 303,600
2. Rounded answers are given below for reference, but you are expected to produce the formulae.

See <https://youtu.be/MkuqH3BFbZ0>

* 1. 1.87 x 1020
  2. 1.02 x 1020

1. Rounded answers are given below for reference, but you are expected to produce the formulae.

See <https://youtu.be/QyOt9tcrsB8>

* 1. 2.43 x 1018  20!
  2. 1.32 x 1011 (10C5 x 10C5 x 4! x 5! / 2) x (5C5 x 5C5 x 4! x 5! / 2)

**Extra Self-Practice Questions**

1. (Chp6.1, Q5) 42
2. (Chp6.1, Q24)
   1. 1000
   2. 4500
   3. 4536
   4. 6000
   5. 2829
   6. 6171
   7. 1543
   8. 257
3. (Chp6.1, Q30) (263 x 103) + (264 x 102)
4. (Chp6.1, Q44) 10C4 x 3! / 2
5. (Chp6.1, Q46)
6. 9C5 x 6!
7. 8C4 x 6!
8. 8C5 x 6! x 2
9. (Chp6.3, Q7) 15,120
10. (Chp6.3, Q15) 65,780
11. (Chp6.3, Q18)
12. 28 = 256
13. 8C3
14. 8C3 + 8C4 + 8C5 + 8C6 + 8C7 + 8C8
15. 8C4
16. (Chp6.3, Q24) 10! x 11C6 x 6!
17. (Chp6.3, 33) 54,600
18. 2920
19. 2.38 x 1015 (you are expected to produce the formula)
20. (i) 462, (ii) 25
21. 1360800
22. 2257920

**~End**