1. C(250,2) = (250!)/(2!(250-2)!) = (250\*249)/2 = 31125
2. (5!)/(3!2!) = (5 × 4 × 3)/(3 × 2 × 1) = 10
3. 2 \* 2 \* 2 = 8
4. 30C3 = 30! / (3! \* (30-3)!) = 30! / (6 \* 27!) = 30 \* 29 \* 28 / (3 \* 2 \* 1) = 4060
5. 6C3 = 6! / (3! \* (6-3)!) = 6! / (3! \* 3!) = (6 \* 5 \* 4) / (3 \* 2 \* 1) = 20
6. 0
7. ((4C2)\*(2C1))+4C3=16
8. (a)

32 \* 20C9

= 32 \* (20! / (9! \* 11!))

= 32 \* (20 \* 19 \* 18 \* 17 \* 16 \* 15 \* 14 \* 13 \* 12) / (9 \* 8 \* 7 \* 6 \* 5 \* 4 \* 3 \* 2 \* 1)

= 5,231,680

(b)

2C2 \* 2C2 \* 2C2 \* 2C2 \* 2C2 \* 15C4 = 1 \* 1 \* 1 \* 1 \* 1 \* 1,386,015 = 1,386,015