

SOLUTIONS:

1. $C_{10,3} = 120$
2. $C_{12,4} = 495$
3. $C_{50,30} = 4.71 \times 10^{13}$
4. $P_{30,10} = 1.09 \times 10^{14}$
5. $C_{20,5} = 15,504$
6. $P_{12,12} = 479,001,600$
7. $C_{20,7} = 77,520$
8. $P_{12,2} = 132$
9. $P_{6,3} = 120$
10. $P_{100,3} = 970,200$
11. $C_{100,7} = 1.6 \times 10^{10}$
12. $P_{25,5} = 6,475,600$
13. $C_{25,5} = 53,130$
14. $C_{200,5} = 2,535,650,040$
15. $C_{40,10} = 847,660,528$