1. $C_2^{10} = \dfrac{10!}{2!8!} = \dfrac{10 \cdot 9}{2 \cdot 1} = \boxed{45}$

2. $C_2^8 = \dfrac{8!}{2!6!} = \dfrac{8 \cdot 7}{2 \cdot 1} = \boxed{28}$.

   $C_6^8 = \dfrac{8!}{2!6!} = \dfrac{8 \cdot 7}{2 \cdot 1} = \boxed{28}$.

3. $\dbinom{2009}{0} = \dfrac{2009!}{0!2009!} = \dfrac{1}{0!} = \boxed{1}$

   $\dbinom{2009}{2009} = \dfrac{2009!}{2009!0!} = \boxed{1}$

4. $\dbinom{5}{0} + \dbinom{5}{1} + \dbinom{5}{2} + \dbinom{5}{3} + \dbinom{5}{4} + \dbinom{5}{5} = 1 + 5 + 10 + 10 + 5 + 1 = \boxed{32}$

   Also, if you remember that the sum of the numbers in the nth row of Pascal's triangle is 2^n. Since the expression is the sum of all the numbers in the 5th row of Pascals triangle, the sum is $2^5 = 32$.

5. $\boxed{\dbinom{25}{4} = C_4^{25}}$

6. Choose 2 from 9, 3 from 5, and 3 from 4. Then we MULTIPLY, not add, the chooses. $\boxed{\dbinom{9}{2}\dbinom{5}{3}\dbinom{4}{3}}$

7. $\boxed{\dbinom{22}{11} = 705,432}$

8. Choose 4 from 56 and 3 from 44. $\boxed{\dbinom{56}{4}\dbinom{44}{3}}$

9. We want to choose 4 diamonds from the 13 diamond cards, 3 spades from the 13 spade cards, and 3 clubs from the 13 club cards. $\boxed{\dbinom{13}{4}\dbinom{13}{3}\dbinom{13}{3}}$

10. First we choose 6 from the 20 actors. Now there are 14 left to choose from, and we choose 6 more. $\boxed{\dbinom{20}{6}\dbinom{14}{6}}$