Problem 1. $99/\binom{100}{2}$

Problem 2. $4\binom{95}{4}/\binom{100}{6}$

Problem 3. (a) 4/7, (b) 10/21, (c) 20/21, (d) 2/21, (e) 1/5

Problem 4. (a) $\frac{365!/(365-n)!}{365^n}$

Problem 5. 2/3

Problem 6. Use the definitions.

Problem 7. (a) $\binom{48}{9}/\binom{52}{13}$ (b) $\binom{48}{13}/\binom{52}{13}$ (c) $\binom{44}{18}/\binom{52}{26}$ (d) $\binom{4}{2}\binom{35}{11}/\binom{39}{13}$ (e) $\binom{4}{2}\binom{22}{11}/\binom{26}{13}$

Problem 8. Only the first and the second are independent.