Sample Spaces and The Counting Principle

Represent the sample space using set notation.

1) A sandwich shop has three types of sandwiches: ham, turkey, and chicken.
   \{ham, turkey, chicken\}

2) The chess club must decide when to meet for a practice. The possible days are Tuesday, Wednesday, or Thursday.
   \{Tuesday, Wednesday, Thursday\}

3) The chess club must decide when to meet for a practice. The possible days are Tuesday, Wednesday, or Thursday. The possible times are 3, 4, or 5 p.m.
   \{(T, 3), (T, 4), (T, 5),
   (W, 3), (W, 4), (W, 5),
   (R, 3), (R, 4), (R, 5)\}

4) When a button is pressed, a computer program outputs a random odd number greater than 1 and less than 9. You press the button twice.
   \{(3, 3), (3, 5), (3, 7),
   (5, 3), (5, 5), (5, 7),
   (7, 3), (7, 5), (7, 7)\}

5) A spinner can land on either red or blue. You spin and then roll a six-sided die.
   \{(R, 1), (R, 2), (R, 3), (R, 4), (R, 5), (R, 6),
   (B, 1), (B, 2), (B, 3), (B, 4), (B, 5), (B, 6)\}

6) There are two boys and a girl on a trivia team. Two questions remain. One team member is randomly picked to answer the first question and a different member is picked to answer the second question.
   \{(B₁, B₂), (B₁, G),
   (B₂, B₁), (B₂, G),
   (G, B₁), (G, B₂)\}

Find the number of possible outcomes in the sample space.

7) A jewelry store sells gold and platinum rings. Each ring is fitted with a ruby, sapphire, emerald, or diamond gemstone.
   \[8\]

8) A spinner can land on either red, blue, or green. You spin twice.
   \[9\]

9) Eight rooms in a house need to be painted. Each room can be painted white or yellow.
   \[256\]

10) Six books need to be placed on a shelf. You randomly arrange the books on the shelf from left to right.
    \[720\]