Advanced Topics in Math NAME
6.5 Permutations and Combinations DATE

### A bag contains 7 blue marbles (marked 1 through 7) and 5 orange marbles (marked 1 through 5). You will reach in and select two from the bag.

1. How many different combinations are possible?
2. How many ways can you select only blue marbles?
3. What is the probability of selecting two orange marbles?

### Blockbuster currently has 15 new releases. Of those, 9 are holiday, 6 are horror. If you select three at random, find the following probabilities.

1. P(3 holiday)
2. P(3 horror)
3. P(2 holiday and 1 horror)
4. P(2 horror or 2 holiday)
5. P(at least 2 horror)

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1. P(3 holiday)
2. P(3 horror)
3. P(2 holiday and 1 horror)
4. P(2 horror or 2 holiday) = P(2 horror, 1 holiday) OR P(2 holiday, 1 horror)
5. P(at least 2 horror) = P(2 horror) OR P(3 horror)