4-1. How many two-digit whole numbers contain no 0 and no more than one 1?

4-2. Triangles ABC and DCB are both isosceles right triangles, as shown. If $AC = 12$, what is the area of triangle BCE?
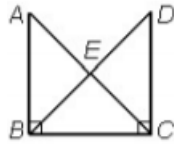
4-3.   When 2^{2020} is multiplied by 5^{2021}, the product has 2021 digits. What is the sum of all these digits?

4-4.   Pat divided x by y and got a quotient of 3 and a remainder of 7. Pat then divided x by $2y$ and got a quotient of q and a remainder of r. If x, y, q, and r are all positive integers, what is the least possible value of r?

4-5.   In an arithmetic progression, the sum of the third and fifth terms is 14 and the sum of the first 12 terms is 129. If the nth term is 193, what is the value of n?

4-6.   In order, Ali, Bobby, and Carmen take turns flipping the same fair coin. The first one to toss a head wins. What is the probability that Ali wins?