Combining means and variances

Let X be the value on a rolled die. We've previously computed the mean and variance of this random variable as

$$\mu_X = \frac{7}{2} \qquad \text{and} \qquad \sigma_X^2 = \frac{35}{12}$$

1. Consider the random variable with values given by the sum on five dice rolled independently. Determine the mean, variance, and standard deviation for this random variable.

2. Think of a coin as a "two-sided die" by assigning the value 0 to tails and 1 to heads. Roll a die and flip a coin and then sum the two values to get the value of a random variable. Determine the mean, variance, and standard deviation for this random variable. Note that you'll need to work out the mean and variance for the random variable that is the value given by the coin flip.