**3F Approximating from the Binomial Distribution**

1. A biased coin has $P\left(Head\right)=0.53$. The coin is tossed 100 times and the number of heads, X, is recorded.
2. Write down a binomial model for $X$
3. Explain why $X$ can be approximated using a normal distribution
4. Find the values of $μ$ and $σ$ in this approximation
5. The binomial random variable $X\~B(150,0.48)$ is approximated by the normal random variable $Y\~N(72,6.12^{2})$.
6. Use this approximation to find $P(X\leq 70)$
7. Also use the approximation to find $P(80\leq X<90)$
8. For a particular type of flower bulb, 55% will produce yellow flowers. A random sample of 80 bulbs is planted.

Calculate the percentage error incurred when using a normal approximation to estimate the probability that there are exactly 50 yellow flowers.