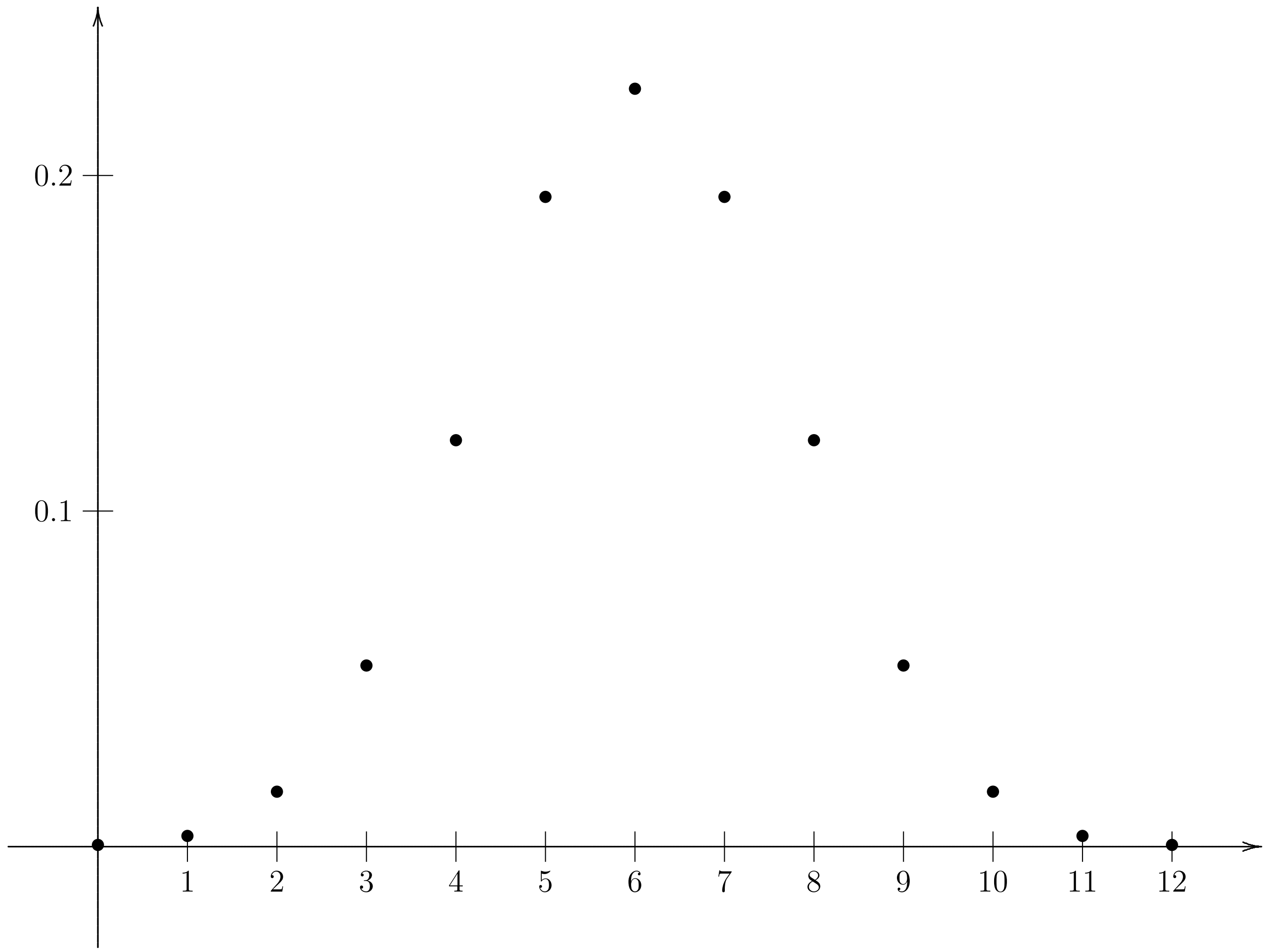
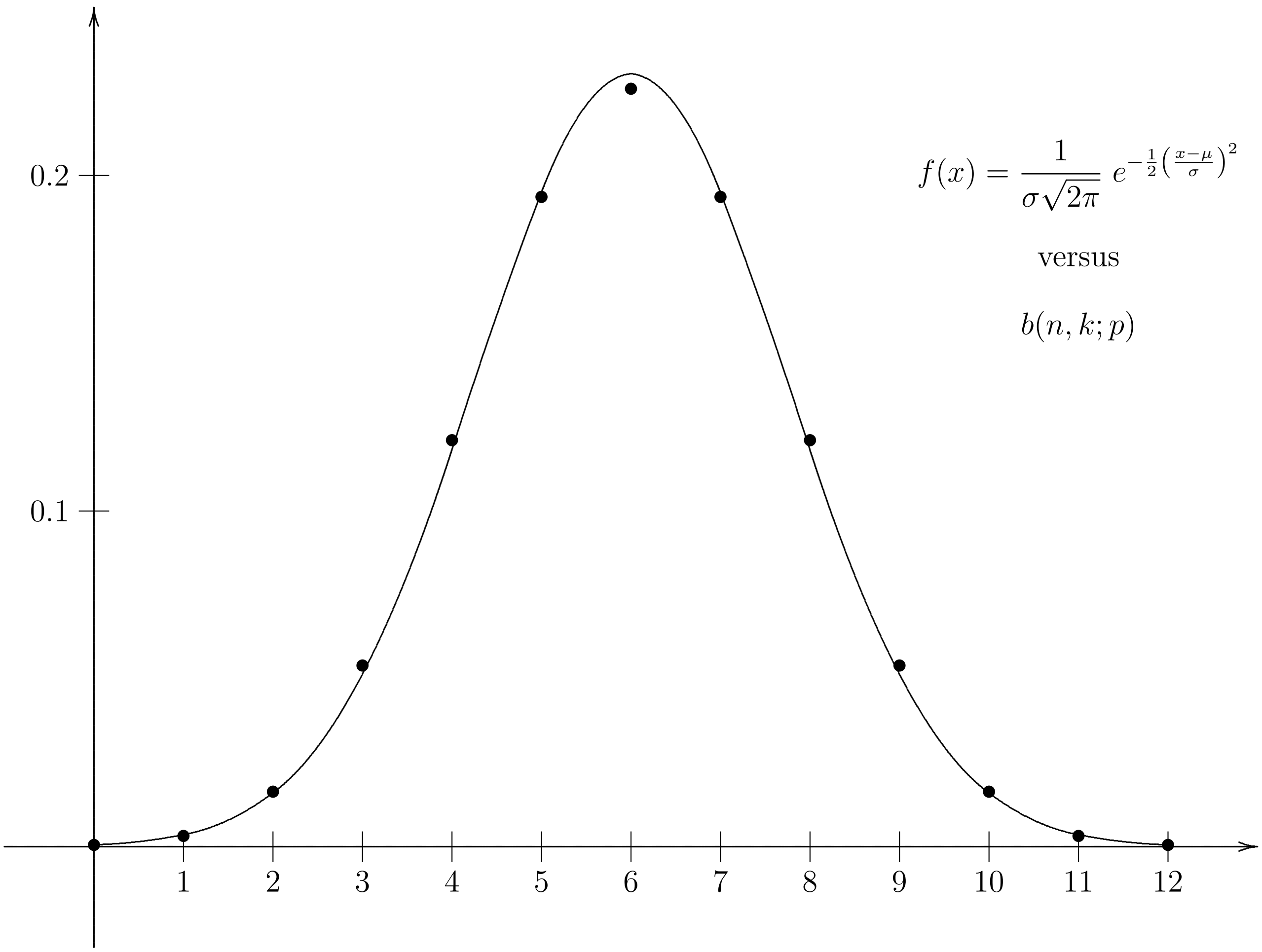



$$n = 12 \qquad \text{and} \qquad p = \frac{1}{2} = 0.5$$



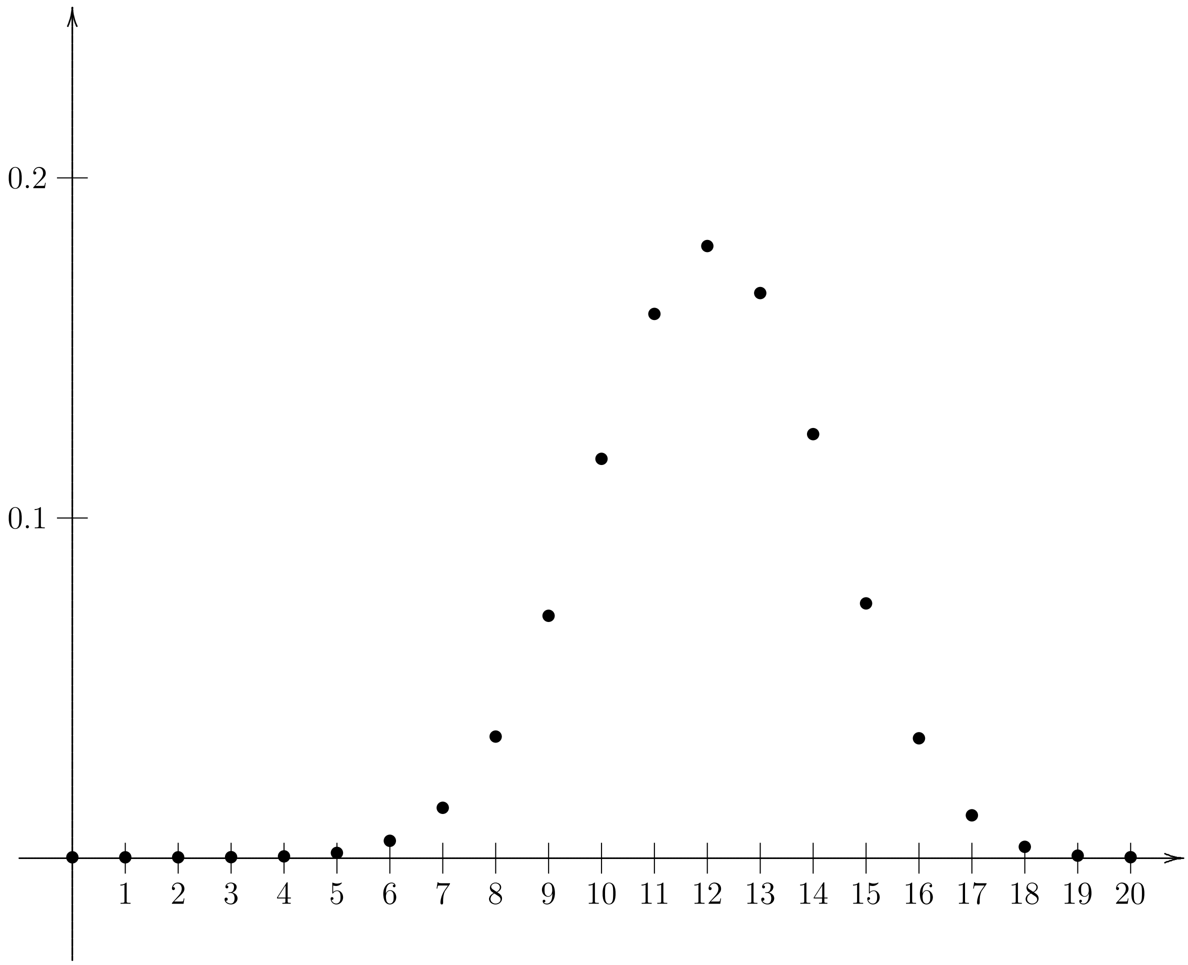

The dots on this graph correspond to the probabilities

$$b(n,k;p) = \binom{n}{k} p^k q^{n-k}$$

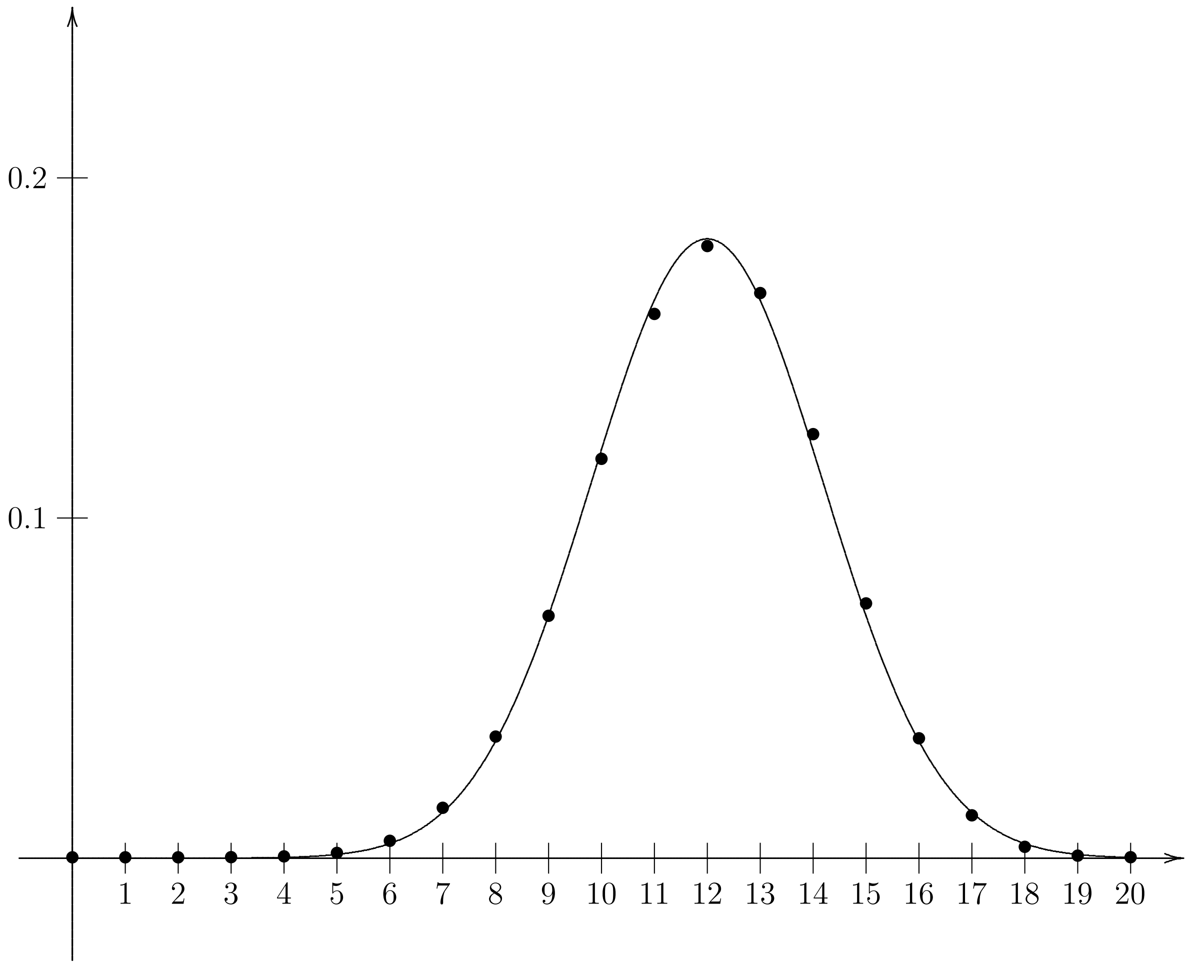
or

$$b(12,k;{}^1\!/_2) = \binom{12}{k}\left(\frac{1}{2}\right)^k\left(\frac{1}{2}\right)^{n-k} = \binom{12}{k}\left(\frac{1}{2}\right)^{12}$$

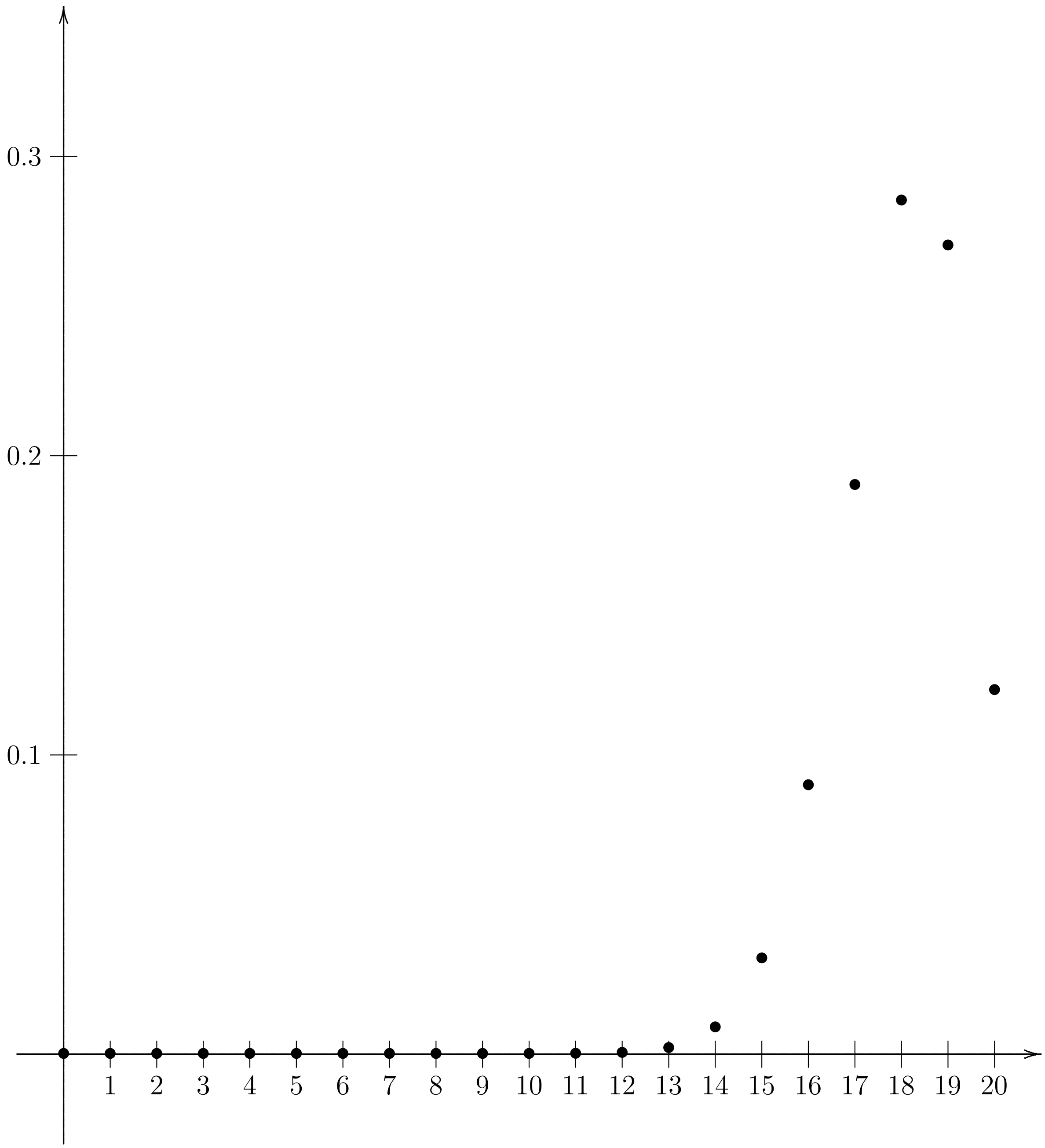
(where $k = 0$ through 12). The curved line represents a normal distribution with mean $\mu = n \cdot p = 12 \cdot \frac{1}{2} = 6$ and standard deviation $\sigma = \sqrt{n \cdot p \cdot q} = \sqrt{3}$. You can see that the dots are very nearly on the curve.



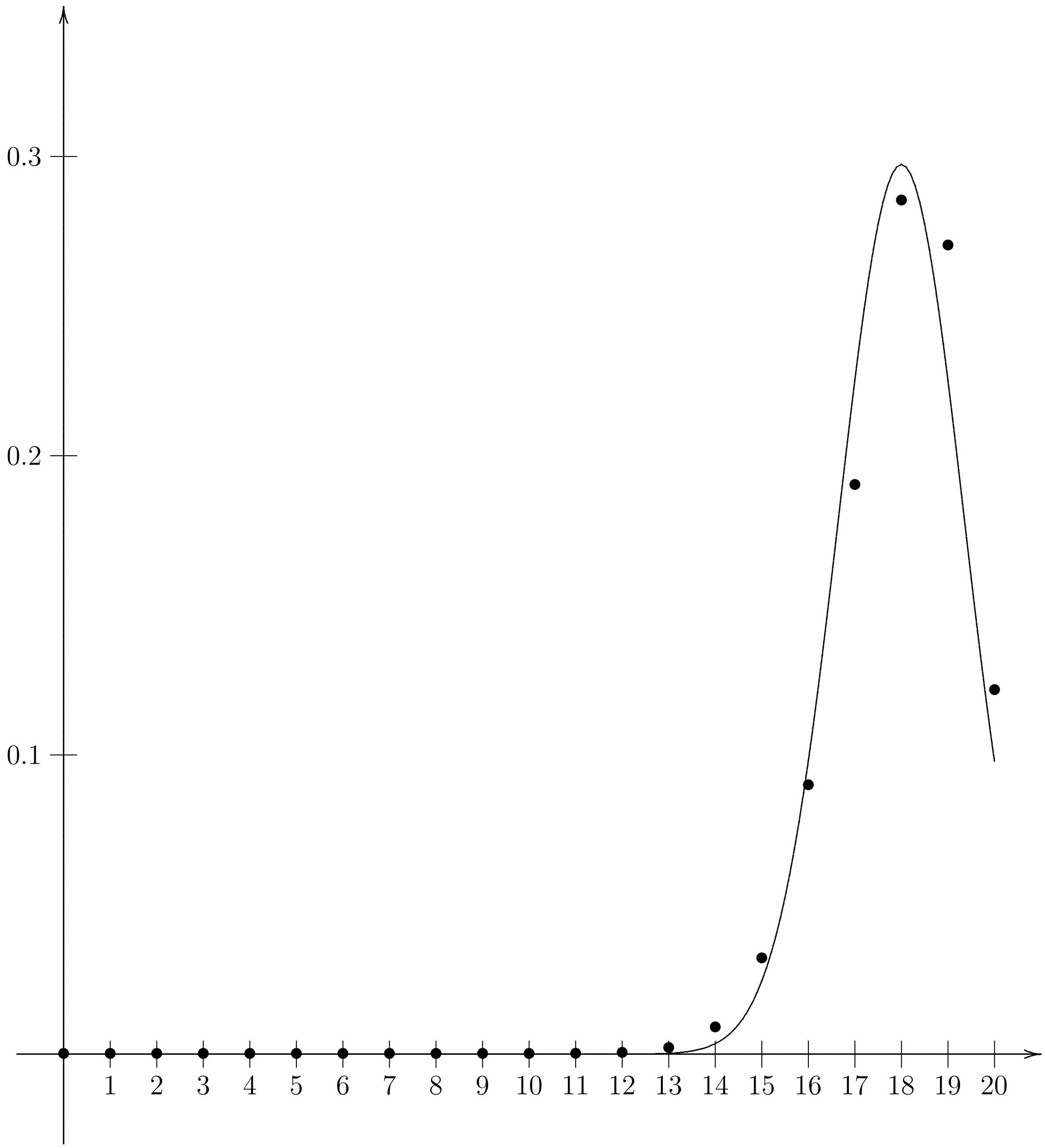

$$n = 20 \qquad \text{and} \qquad p = \frac{3}{5} = 0.6$$




This is the same as before, but now $n = 20$ and $p = 3/5$, so $\mu = n \cdot p = 20 \cdot \frac{3}{5} = 12$ and $\sigma = \sqrt{n \cdot p \cdot q} = \sqrt{4.8}$. You can see that the dots are very nearly on the curve.




$$n = 20 \qquad \text{and} \qquad p = \frac{9}{10} = 0.9$$




This is again the same as before, but now $n = 20$ and $p = {}^{9}\!/_{10}$, so $\mu = n \cdot p = 20 \cdot \frac{9}{10} = 18$ and $\sigma = \sqrt{n \cdot p \cdot q} = \sqrt{1.8}$. You can see that the dots are still very close to the curve, even with the large value of $p$.