10 22 6

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6.8 ( )

$X \sim Bin(n,p)$ m_1, m_2 $0 \le m_1 \le m_2 \le n$
$P(m_1 \le X \le m_2)$ X n
n $(X-np)/\sqrt{np(1-p)}$ (
X $E[X]=np, V[X]=np(1-p)$)

$$P(m_1 \le X \le m_2) \approx \Phi(\frac{m_2-np}{\sqrt{np(1-p)}}) - \Phi(\frac{m_1-np}{\sqrt{np(1-p)}})$$

$\Phi(\cdot)$ m_1, m_2 $X=m_1, X=m_2$
6.2 $m_1 \le X \le m_2$ $m_1-0.5 \le X \le m_2+0.5$

$$P(m_1 \le X \le m_2) \approx \Phi(\frac{m_2+0.5-np}{\sqrt{np(1-p)}}) - \Phi(\frac{m_1-0.5-np}{\sqrt{np(1-p)}})$$

120 6 25 30 $P(25 \le Y_{120} \le 30) =$
0.129 0.103, 0.130