

By central limit theorem,

柯文哲的投票人數=  $X$  分佈為：

$$N(np, np(1-p)) = N(72, 36)$$

$$Y = \frac{X - 72}{\sqrt{36}} = N(0, 1)$$

$$P(82 \leq X \leq 89) = P\left(\frac{(82 - 72)}{6} \leq Y \leq \frac{(89 - 72)}{6}\right)$$

$$= P\left(\frac{5}{3} \leq Y \leq \frac{17}{6}\right) = \phi\left(\frac{17}{6}\right) - \phi\left(\frac{5}{3}\right)$$

$$= 0.9977 - 0.9521 = 0.0456$$