

4(a)	Assume flaws in cups are independent OR prob of containing a flaw is the same for all cups
	$H_0: P(\text{contains flaw}) = 0.18$ $H_1: P(\text{contains flaw}) < 0.18$
	$[P(X \leq 3) =] 0.82^{40} + 40 \times 0.82^{39} \times 0.18 + {}^{40}C_2 \times 0.82^{38} \times 0.18^2 + {}^{40}C_3 \times 0.82^{37} \times 0.18^3$ $= 0.0003569 + 0.0031338 + 0.013414 + 0.037298$
	0.0542 (3 sf)
	$0.0542 > 0.05$
	[Accept H_0] Insufficient evidence to accept factory owners claim. [Insufficient evidence that percentage less than 18%]
4(b)	$np = 7.2$ which is too large, or > 5 . Or $n = 40$ which is not greater than 50. Or $p = 0.18$ which is not small or > 0.1 .