4 An inspector believes that 18% of cups made at a certain factory contain flaws. The factory owner claims that the true percentage is less than 18%. The inspector examines a random sample of 40 cups and finds that 3 of them contain flaws.

(a) Stating a necessary assumption, use a binomial distribution to test the factory owner's claim at the 5% significance level. [6]

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(b) Explain why it would **not** be appropriate to use the Poisson approximation to the binomial distribution to carry out the test in part **(a)**. [1]

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