10 Some packets of a certain kind of biscuit contain a free gift. The manufacturer claims that the proportion of packets containing a free gift is 1 in 4. Marisa suspects that this claim is not true, and that the true proportion is less than 1 in 4. She chooses 20 packets at random and finds that exactly 1 contains the free gift.

(a) Use a binomial model to test the manufacturer's claim, at the 2.5% significance level. **[7]**

The packets are packed in boxes, with each box containing 40 packets. Marisa chooses three boxes at random and finds that one box contains 19 packets with the free gift and the other two boxes contain no packets with the free gift.

(b) Give a reason why this suggests that the binomial model used in part **(a)** may not be appropriate. **[1]**