

- (b)** A survey was carried out on behalf of a television station to investigate the popularity of a certain show.

- (i) A random sample of 1560 television viewers was surveyed. Find the margin of error of the survey. Give your answer as a percentage, correct to 1 decimal place.

[illegible]

- (ii) In the survey, 546 of the 1560 viewers surveyed said that they liked the show. Use your answer to part **b(i)** above to create a 95% confidence interval for the percentage of viewers who liked the show.

[illegible]

- (iii) An executive for the television station had claimed that 40% of viewers liked the show. Use your answer to part **b(ii)** above to conduct a hypothesis test, at the 5% level of significance, to test the executive's claim. State your null hypothesis, your alternative hypothesis and give your conclusion in the context of the question.

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