

16 Research conducted by social scientists has shown that 16% of young adults smoke cigarettes.

Two young adults are selected at random.

(a) Determine the probability that one smokes cigarettes and the other doesn't. [2]

The same research has also shown that

- 75% of young adults drink alcohol.
- 66% of young adults drink alcohol, but do **not** smoke cigarettes.

(b) Determine the probability that a young adult selected at random **does** smoke cigarettes, but **does not** drink alcohol. [2]

(c) A young adult who drinks alcohol is selected at random. Determine the probability that this young adult smokes cigarettes. [2]

(d) Using your answer to part (c), explain whether the event that a young adult selected at random smokes cigarettes is independent of the event that a young adult selected at random drinks alcohol. [2]