

TG 5 It is known that 24% of HSC students do not have a driver licence. In a random sample of 16* HSC students, what is the probability that half of them will not have a driver licence?

* NESAs has 15 ... but cannot use 'half of 15' ... projectmaths

$$n = 16$$

$$P(\text{licence}) = p = 0.24$$

$$\begin{aligned} np &= 16 \times 0.24 \\ &= 3.6 \end{aligned}$$

The distribution of sample proportions cannot be approximated using the normal distn as $np < 10$.

$$\begin{aligned} \text{Using Binomial probability: } P(X = 8) &= {}^{16}C_8 (0.24)^8(0.76)^8 \\ &= 0.0158 \text{ (4 dec pl)} \end{aligned}$$

* These solutions have been provided by [projectmaths](http://projectmaths.com.au) and are not supplied or endorsed by NESA.

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