

2 Amelie is a basketball player.  
In one season, she scores from 40% of her free throws.

At the end of the season her sports psychologist retires.

Before the start of the next season, Amelie trains with a new sports psychologist.  
After training with the new sports psychologist, Amelie takes 60 free throws and scores from 31 of them.

Amelie believes that training with the new sports psychologist has changed the proportion of her free throws from which she scores.

(a) Using a suitable test, assess Amelie's belief.

You should

- state your hypotheses and conclusion clearly
- use a 5% significance level

**(4)**

(b) Find the  $p$ -value for the test in part (a).

**(1)**