

**1 (a) (i)** Express  $x^2 - 8x + 11$  in the form  $(x - a)^2 + b$  where  $a$  and  $b$  are constants. **[2]**

**(ii)** Hence write down the minimum value of  $x^2 - 8x + 11$ . **[1]**

**(b)** Determine the value of the constant  $k$  for which the equation  $x^2 - 8x + 11 = k$  has two equal roots. **[2]**