5 **(a)** The heights of the members of a club are normally distributed with mean 166 cm and standard deviation 10 cm.

   (i) Find the probability that a randomly chosen member of the club has height less than 170 cm. [2]

....

....

....

....

....

....

....

....

....

   (ii) Given that 40% of the members have heights greater than h cm, find the value of h correct to 2 decimal places. [3]

....

....

....

....

....

....

....

....

....

....

....

(b) The random variable X is normally distributed with mean μ and standard deviation σ.

Given that $\sigma = \frac{2}{3}\mu$, find the probability that a randomly chosen value of X is positive. [3]