

11 The random variable Y has the distribution $N(\mu, \sigma^2)$.

(a) Find $P(Y > \mu - \sigma)$. **[1]**

(b) Given that $P(Y > 45) = 0.2$ and $P(Y < 25) = 0.3$, determine the values of μ and σ . **[6]**

The random variables U and V have the distributions $N(10, 4)$ and $N(12, 9)$ respectively.

(c) It is given that $P(U < b) = P(V > c)$, where $b > 10$ and $c < 12$.

Determine b in terms of c . **[2]**