Exercise 3

Paper 1 style · No calculator

3 4 marks SL 4.9 ●●○ Typical

A random variable X is normally distributed with mean 50. It is given that $P(X < 44) = 0.2$.

(a) Write down $P(X > 56)$. **[1]**

(b) Find $P(44 < X < 56)$. **[2]**

(c) Find $P(X < 56)$. **[1]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

0.2 **A1**

Total 1 mark

Note 44 and 56 are symmetric about 50.

MARKSCHEME (b)

$1 - 0.2 - 0.2$ **(M1)**

$= 0.6$ **A1**

Total 2 marks

MARKSCHEME (c)

$1 - 0.2 = 0.8$ **A1**

Total 1 mark