



GCE MARKING SCHEME

**MATHEMATICS - C1-C4 & FP1-FP3
AS/Advanced**

SUMMER 2015

[illegible]

| | | | |
|----------------|--|-------------|--|
| 7(a)(i) | $P(Y \leq y) = P(\sqrt{X} \leq y)$ $= P(X \leq y^2)$ $= \frac{y^2 - a}{b - a}$ | M1 | |
| | | A1 | |
| | | A1 | |
| (ii) | Attempting to differentiate, | M1 | |
| | giving $\frac{2y}{b-a}$ | A1 | |
| (b) | $f(y) = \frac{2y}{b-a} \text{ for } \sqrt{a} \leq y \leq \sqrt{b}$ | A1 | |
| | $= 0$ otherwise | | |
| | We are given that | | |
| | $\frac{a+b}{2} = 5.5 \text{ and } \frac{(b-a)^2}{12} = 3$ | B1B1 | |
| | Solving, | M1 | |
| | $a = 2.5, b = 8.5$ | A1A1 | |