| Q | Marking instructions | AO | Marks | Typical solution |
|---|---|---|---|---|
| 8(a) | Obtains $e^3$<br>May be seen anywhere<br>Accept AWRT 20.1 | 1.1b | B1 | $\ln x - \ln y = 3$<br>$\ln \frac{x}{y} = 3$<br>$\frac{x}{y} = e^3$<br>$x = e^3 y$ |
| | Uses a law of logarithms appropriately<br>or<br>Uses a rules of indices appropriately | 1.1a | M1 | |
| | Obtains $x = e^3 y$ | 1.1b | A1 | |
| | **Subtotal** | | **3** | |

| Q | Marking instructions | AO | Marks | Typical solution |
|---|---|---|---|---|
| 8(b) | Obtains a correct equation in $x$ or $y$ only<br>FT their answer to **(a)** provided it does not involve logarithms | 1.1a | M1 | $e^3 y + y = 10$<br>$y = \frac{10}{1+e^3}$<br>$x = \frac{10e^3}{1+e^3}$ |
| | Obtains $x = \frac{10e^3}{1+e^3}$ or $y = \frac{10}{1+e^3}$ | 1.1b | A1 | |
| | Obtains $x = \frac{10e^3}{1+e^3}$ and $y = \frac{10}{1+e^3}$ | 1.1b | A1 | |
| | **Subtotal** | | **3** | |

| | | | | |
|---|---|---|---|---|
| | **Question 8 Total** | | **6** | |