

| Question |      | Answer  | Marks                                    | AOs                               | Guidance  |   |
|----------|------|---|--|-----------------------------------|---|---|
| 9        | (i)  | $y = \frac{e^x}{1 - e^x}$ $y(1 - e^x) = e^x$ $[y = e^x(1 + y)] \quad e^x = \frac{y}{1 + y}$ $f^{-1}(x) = \ln\left(\frac{x}{1 + x}\right)$ | <p>M1</p> <p>A1</p> <p>A1</p> <p>[3]</p> | <p>1.1a</p> <p>1.1</p> <p>2.1</p> | <p>Clearing fractions</p> <p>Expression for <math>e^x</math></p> <p>Condone 'y = ' Condone no brackets or mod</p> | <p>x and y may be interchanged at any stage</p> |
| 9        | (ii) | $f^{-1}(x) \neq 0$  | <p>B1</p> <p>[1]</p>                     | <p>1.2</p>                        | <p>Allow <math>y \neq 0</math> but not <math>x \neq 0</math></p>  |   |