**9** **(a)** Solve the following simultaneous equations.

$$e^{x+y} \times e^{3x-2y} = 1$$

$$x^2y = 256$$ [5]

**(b)** Solve the equation $10e^{(2x-1)} - 11 = 6e^{(1-2x)}$, giving your answer in exact form. [4]