**10** (a) Show that $\dfrac{9^{3y}}{243} = 3^{(6y-5)}$

**(4)**

(b) Solve the simultaneous equations

$$\frac{9^{3y}}{243} = 27^{(x-2)}$$

$$\log_{10}\sqrt{6xy} = \log_4 2$$

**(9)**

**Question 10 continued**

**Question 10 continued**

**Question 10 continued**

**(Total for Question 10 is 13 marks)**