

Name _____

Student Number _____

Show all work. Label your answers clearly.

1. Put the following equation in standard exponential form.

$$y = \frac{3^{(7x-1)}}{3^{4x}}$$

2. Solve the following for x . Leave your answer in exact form (e.g. do not plug it into your calculator).

$$12 = 3(e^{-x})^6$$

3. David is walking through a field. He starts at $(1, -2)$ and walks in a straight line at a constant speed. Six seconds later, he is at the point $(25, 16)$.

a. Find parametric equations $x(t)$ and $y(t)$ giving David's x and y coordinates.

b. There is a stream running through the field, given by the equation $y = \frac{-1}{8}(x - 1)^2 + 18$. When does David reach the stream?