

Name ANSWER KEY

\_\_\_\_\_ points

Express as the composition of two functions:  $f(x) = (4x - x^2)^{100} = h(g(x))$  where

$$x \xrightarrow{g(x) = 4x - x^2} 4x - x^2 = u \xrightarrow{h(u) = u^{100}} u^{100} = (4x - x^2)^{100}$$

$$\text{or } f(x) = \underbrace{(4x - x^2)}_{g(x) = u}^{100} = u^{100}$$

$$h(u) = u^{100}, \quad u = g(x) = 4x - x^2$$

$$\therefore f(x) = h(g(x))$$