

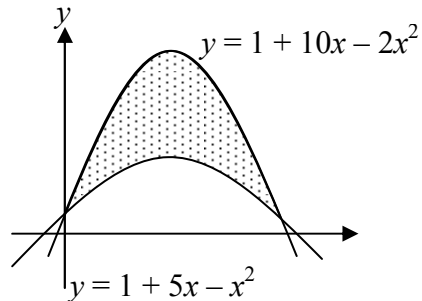
## Higher Integration 1.

1. Find  $\int 3x^2 + 4x dx$  (3)

2. Find the value of  $\int_1^4 \sqrt{x} dx$  (4)

3. A curve, for which  $\frac{dy}{dx} = 6x^2 - 2x$ , passes through the point  $(-1, 2)$ .  
Express  $y$  in terms of  $x$ . (3)

4. Calculate the shaded area enclosed between the parabolas with equations  $y = 1 + 10x - 2x^2$  and  $y = 1 + 5x - x^2$



(6)

5. Find  $\int \sqrt[3]{x} - \frac{1}{\sqrt{x}} dx$  (4)

**TOTAL (20)**