SPTA
Higher Homework
Further Calculus (A)

1. Find the derivative of

(a) $y = (6x - 1)^4$ (b) $f(x) = 4\sqrt{(3x - 1)}$ (c) $y = \frac{6}{(2x-5)^2}$

(d) $f(x) = 4\cos 3x$ (e) $f(x) = 3\sin^2 x$ **(10)**

2. A curve has equation $y = (3x + 2)^4$.

Find the equation of the tangent to this curve at the point where x = -1. **(4)**

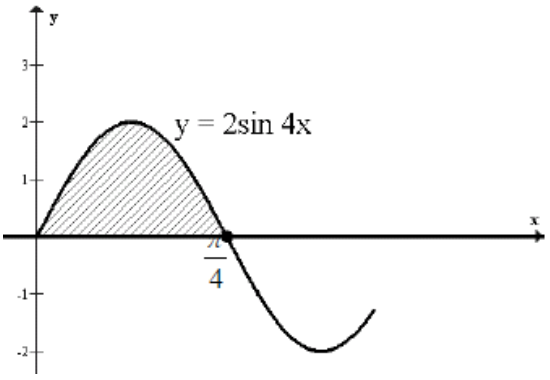
3. (a) $\int (3x-4)^3 dx$ (b) $\int \sin(6x-2)dx$ (c) $\int_1^2 \frac{8}{(2x-1)^3} dx$ **(7)**

4. $\frac{dy}{dx} = 8\cos 4x$. If this curve passes through the point $(\pi/6, 6)$, find y. **(4)**

5. The diagram shows part of the graph of y = 2sin4x.

It cuts the x-axis at 0 and $\pi/4$

Calculate the shaded area.



(4)