SPTA
Higher Homework
Further Calculus (B)

1. Differentiate the following with respect to x

(a) $2\cos x + 3\sin x$ (b) $(x^4 - 2)^5$ (c) $\sqrt{(1-2x)}$ (d) $\sin^2 3x$ **(9)**

2. Find the following integrals

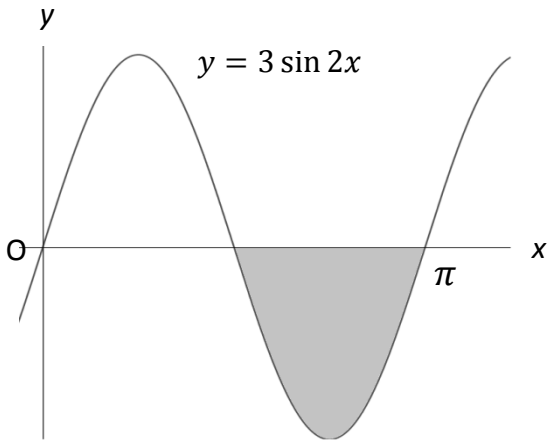
(a) $\cos(2x-1)$ (b) $4x^3 - \sin(4x-3)$ **(4)**

3. Evaluate $\int_2^3 (3x-8)^3\, dx$ **(4)**

4. Find the equation of the tangent to the curve $y = (2x-10)^3$ at the point $(6,8)$ **(4)**

5. Find an expression for y if $\frac{dy}{dx} = \cos 2x$ and $y = 0$ when $x = \frac{\pi}{2}$ **(4)**

6. The diagram shows part of the graph of $= 3\sin 2x$. Calculate the shaded area.



(4)