

1. Evaluate the following

(a) $\int \cos(5x) \sin(5x) \sin(\sin(5x)) dx$

(b) $\int \arctan(x) dx$

(c) $\int_{-5}^5 \arctan(x)x^4 dx$

(d) $\int e^x \cos(x) dx$ Hint: Try parts twice and be careful with your signs

2. Find the area of each region described

(a) Bounded by the graphs of $y = e^{\sqrt{x}}$, $y = 1$, and $x = 3$

(b) Bounded by the graph of $y = \sin(x^2)$ and the x -axis for $0 \leq x \leq \sqrt{\pi}$