

- Show all your work for each problem; show enough work to fully justify your answer.
- Simplify all answers as far as possible.
- All numerical answers must be in terms of actual numbers and standard constants like π .

(1) [Points: 10+5] Let $f(x) = \frac{\cos x}{\sin^3 x}$.

(a) Find $\int f(x) dx$.

(b) Find $\int_{-\pi/2}^{\pi/2} f(x) dx$.