

Full Name:

ID:

Section:

Question 1 Write the partial fractional decomposition of $f(x) = \frac{x-2}{(x^4-1)(x^3-1)(x-1)}$.

Question 2 Evaluate the following integrals:

a) $\int_0^{\frac{\pi}{6}} \sqrt{1 + \sin x} \, dx$

b) $\int \cos(\ln x) dx$

c) $\int \tan^2 x \csc^2 x dx$

d) $\int \sqrt{x - x^2} dx$

$$e) \int \frac{x-1}{x^2+2x+2} dx$$

$$f) \int \frac{dx}{x^3(x^4+16)}.$$