

NAME:

Worksheet Week VII

(a) Find the value of the integral of $g(z)$ around the circle $|z - i| = 2$ in the positive sense when

(i) $g(z) = \frac{1}{z^2+4}$

(ii) $g(z) = \frac{1}{(z^2+4)^2}$

(iii) $g(z) = \frac{1}{z^2-4}$

(b) Find the value of

$$\int_C \frac{2s^2 - s - 2}{(s^2 - 1)} ds$$

when C is

(i) The positive oriented circle $|z + 1| = 1$.

(ii) The positive oriented circle $|z| = 3$.

(iii) The paths drawn on the blackboard.