

## LINEARIZATION AND DIFFERENTIALS

- (1) Find (i) the linearization  $L(x)$ , and (ii) the differential  $dy$  of  $y = f(x) = x + \frac{1}{x}$ , both at the point  $x = 2$ .

$$L(x) = \underline{\hspace{2cm}}.$$

$$dy = \underline{\hspace{2cm}}.$$

- (2) About how accurately (as a percentage) must the interior diameter of a cylindrical storage tank that is 14 m high be measured in order to calculate the tank's volume within 4% of its true value?

The acceptable percentual error measuring the interior diameter is            .%