



## Question 9.

(a) (i)

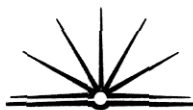
(ii)

$x$	2	3	4
$f(x)$	0	0.693	1.099

$$= \frac{4-2}{6} [0 + (4 \times 0.693) + 1.099]$$

$$= \frac{1}{3} [3.871]$$

$$= 1.291$$



(b) 5000 invested each year, 8.75% p/a commencing 2003.

$$A_1(2003) = 5000 \times (1.0875)$$

$$A_2 = A_1 \times (1.0875) + 5000$$

$$= [5000 \times (1.0875)] \times 1.0875 + 5000$$

$$= 5000 (1.0875)^2 + 5000$$

$$A_3 = A_2 \times (1.0875)^3 + 5000 (1 + 1.0875 + 1.0875^2 + \dots + 1)$$

$$A_{20} = 5000 (1.0875)^{20} + 5000 (1 + \dots + 1.0875^{19})$$

geometric series  $S_n = \frac{1(1 - 1.0875^{19})}{1 - 1.0875}$

= \$250 887.90 when she retires.

(c)