

Start here for
Question Number: **9**

(A) Plan

$$\begin{aligned} A &= P \left(1 + \frac{r}{100} \right)^n \\ &= 500 \left(1 + 0.005 \right)^{240} \\ &= 500 \left(1.005 \right)^{240} \end{aligned}$$

(ii) withdraws \$2000/month @ .5% / month
starts with \$232175.55

$$(1) \quad A_n = (P - 400000) \times 1.005^n + 400000$$

(2) invested for 240 months \$500

\therefore if he takes \$2000 out per month
this is 4x what he put in

\therefore it will $\frac{240}{4}$ months to spend the

money in the account.

$\therefore = 60$ months

$$(B) \quad y = f(x) \quad 0 \leq x \leq 6$$

(i) the value of x for which $f(x)$ is increasing is 2.

(ii) Maximum value of $f(x)$ is 6.

$$(iii) \quad f(0) = 0$$
$$\therefore f(6) = 6$$

$$(iv) \quad y = f(x) \quad 0 \leq x \leq 6$$

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