

NAME: _____, I.D# _____

NOTE – Show complete work for full credit. The questions are not in any order of difficulty at all.

Question – I. (129TB24). (Marks: 10).

Depreciation. A new television depreciates \$ 120 per year, and it is worth \$ 340 after four years. Find a function that describes the value v of this television, if x is the age of the television in years. Also find the value of the television after six years.

Linear Equation : $v = Ax + B$.

Where $A =$ _____

$B =$ _____.

Value of TV after 6 years: $v =$ _____ \$

Question – II. (615SM39). (Marks: $2 \times 5 = 10$).

Demand Equation. The price p (Dollars) and the quantity x sold of a certain product obey the

demand equation $p = -\frac{1}{6}x + 100$, $0 \leq x \leq 600$

- (a) Express the revenue R as a function of x .
(Remember, $R = xp$)

$R =$ _____

- (b) What is the revenue R if 200 units are sold?

R (at $x = 200$):= _____ Dollars.

- (c) What quantity x maximizes revenue?

$x :=$ _____

- (d) What is the maximum revenue?

Maximum Revenue: $R =$ _____ Dollars

- (e) What price p should the company charge to maximize revenue?

Price $p :=$ _____ Dollars.