Week 8 Homework MAT 2601

Question 1

$$\frac{dy}{dt} = 92.$$

Question 2.

$$\frac{dy}{dt} = \frac{5}{3}.$$

Question 3.

-64.

Question 4

204

Question 5.

$ \boxed{3} per day.

Question 6.

$ \boxed{450} ~~per~~ units/months^2

Question 7

$$\frac{dL}{dt} = \frac{1}{3KL^2}\frac{dW}{dt}$$

Question 8.

$0.04 \text{ in}^3/\text{min}$.

Question 9.

~~246.50 mph.~~ +74.00 mph.

Question 10.

246.50 mph.

Question 11

(a) -1 or 1

(b) Since the demand is unitary, there will be no change in revenue with price increase.

question 12.

(a) -12. or 12

(b) Since the demand is elastic, an increase in price will ~~increase~~ decrease total revenue.

question 13

(a) -0.86. or 0.86.

(b) Demand is Inelastic.

(c) An increase in price will result in an increase in total revenue.

14. Question 14.

(a) $\eta = \frac{-3(110-q)}{q}$

(b) ~~165~~. unitary elasticity:

$q = 165$.

(c)

Inelastic: $(0, 165)$

Elastic: $(165, \infty)$

(c) Increasing: $(0, 165)$

Decreasing $(165, \infty)$

(d) $q = 165$

(e) Graph: 3rd graph.

Yes.

Question 15.

$325 / item.

Question 16.

$4800 per item.

Question 17.

$t = \$2225$ / item.