

9. Economics: elasticity of demand. Consider the demand function
 $q = D(x) = 400e^{-0.3x}$

A. Find the elasticity.

$$\left| \frac{f'(x)}{f(x)} \right| = 0.3$$

B. Find the elasticity at $x = 1$, and state whether the demand is elastic or inelastic.

$$-0.3 \text{ inelastic}$$

C. Find the elasticity $x = 7$, and state whether the demand is elastic or inelastic.

$$-2.1 \text{ inelastic}$$

D. Find the price for which the total revenue is a maximum.

$$3.33$$

10. Henri buys a new car for \$25,000 with 25% down and the rest financed through an amortized loan at 5%, compounded monthly for 6 years.

a) Find Henri's monthly loan payment.

$$224.14$$

b) Assuming that Henri makes every payment, find the total amount he will pay back.

$$20458$$

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