Warmup 22-05-24

From
Archived
Exams
Workbook

7. The price of a new car is $26,000 (taxes included). It depreciates at a rate of 20% per year. What is the approximate residual value of the car after 3 years?

A. $10 400   **B.** $13 300   **C.** $15 600   **D.** $20 800

JUNE 2019

36. Renasha deposits $1,200.00 into a savings account that earns simple interest at a rate of 1.72% annually. What is the total value of Renasha's account at the end of one year?

     A) $20.64   B) $1,220.64   C) $1,447.68   D) $3,264.00

39. Marshall and Kim are renting a house that they hope to purchase. They pay $1,800 in annual heating costs and know that the annual property taxes are $2,500. Their combined gross income is $5,200 per month.

   a) Based on the gross debt service ratio (GDSR), what is the maximum monthly mortgage payment they can afford?

   b) If they have saved $30,000.00 for a down payment, what is the maximum house price they can afford based on a 25-year amortization period at an interest rate of 4.64%, compounded semi-annually?

4-7. A movie theatre wants to determine the price they should charge for a movie ticket to maximize the revenue. They experiment with different prices and the revenue earned. The results are in the table.

Ticket Price ($)	Revenue ($)
5.00	660.00
5.50	693.00
6.00	720.00
6.50	741.00
7.25	761.25
8.50	765.00
9.00	756.00

From UNIT C WORKBOOK

a) Find the quadratic regression equation modeling the revenue the theatre earns at different ticket prices.
b) How well does the data model a quadratic fit?
c) At what price is revenue maximized? What is the maximum revenue?
d) If the theatre charges $15 for a particular movie, what revenue should they expect? How many people purchased tickets at that price?

4-12. You have the following data. Assume a is the independent variable. [instead of x and y, we are using a and b; big deal]

a	-0.8	3.4	4.4	5	6.8
b	22.5	28.5	-17.0	-36.0	-12.8

a) Find the cubic function of best fit for the data.
b) How well does a cubic function model the data?
c) Find the coordinates of the relative minimum.