1) [2 pts]

All Fired Up A large forest fire in the western United States burns for 14 days, spreading to cover approximately 3850 acres. Firefighters do their best to contain the fire, but hot temperatures and high winds may prompt them to request additional support.

a) The fire spreads at an average rate of how many acres per day?

b) Officials estimate that the fire will spread to cover 9075 acres before it is contained. At this rate, how many more days will it take for the fire to cover an area of 9075 acres?

c) Additional help arrives, and the firefighters contain the fire in 7 more days. In total, how many acres does the fire cover before it is contained?

d) If the fire had spread to cover an area of 7000 acres, it would have reached Bowman Valley. Explain how the graph shows that firefighters stopped the spread of the fire before it reached Bowman Valley.
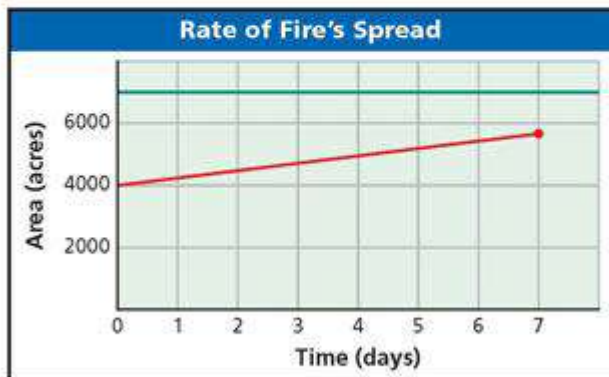
e). The total cost of fighting the fire for 21 days was approximately $1,440,000. What was the approximate cost per acre of fighting the fire?

2) [2 pts]

Remember the Alamo! The Spanish Club is planning a trip for next summer. They plan to travel from Fort Worth, Texas, to San Antonio, Texas. They can spend only $550 for the entire trip.

a) The treasurer of the club budgets $60 for gasoline. The current gas price is $1.95/gallon. The school van gets an average of 20 miles per gallon of gasoline. Determine how many miles they can drive on this budget. Round your answer to the nearest mile.

b) The distance from Fort Worth to San Antonio is 266 miles. Write an inequality that can be used to solve for the number of miles m that they can drive while in San Antonio. Solve your inequality and graph the solutions.

c) The treasurer budgeted $200 for hotel rooms for one night. The club chose a hotel that charges $58 per night. Write an inequality that can be used to solve for the number of rooms they can reserve n. What is the maximum number of rooms that they can reserve in the hotel?

d) Use the maximum number of rooms you found in part c. How much will the club spend on hotel rooms?

e) The club members plan to spend $80 on food. They also want to see attractions in San Antonio, such as SeaWorld and the Alamo.

Write an inequality that can be solved to find the amount of money available for seeing attractions. What is the maximum amount the club can spend seeing attractions?

3) [2 pts]

Guitar Picks Cullen and his band are interested in recording a
CD of their music. The recording studio charges $450 to record the
music and then charges $5 for each CD. The band is required to
spend at least $1000 for the total of the recording and CD charges.

a) Write an equation for the cost c of the CDs based on the number of
   CDs n.

b) Write an inequality that can be used to determine the minimum
   number of CDs that must be burned at this studio to meet the $1000
   total.

c) Solve your inequality from Problem **b**

d) The band orders the minimum number of CDs found in Problem **c**
   They want to sell the CDs and make at least as much money
   as they spent for the recording studio and making the CDs.
   Write an inequality that can be solved to determine the
   minimum amount the band should charge for their CDs.

e) Solve your inequality from
   Problem **d**

f) If the band has 30 more CDs
   made than the minimum
   number found in Problem **c**
   and charges the minimum
   price found in Problem **e**
   will they make a profit? If so,
   how much profit will the
   band make?