Homework Section 8.1 System of Linear Equations in Two Variables
Read sections 8.1, 1.3 and 1.7 in your book. Complete all MyMathLab assignments for 8.1 and 1.3b

Solve each system using either substitution method or elimination(addition) method. Identify systems with no solution and systems with infinitely many solutions.

8.1.7 $\begin{cases} x + 3y = 8 \\ y = 2x - 9 \end{cases}$

8.1.9 $\begin{cases} x = 4y - 2 \\ y = 6y + 8 \end{cases}$

8.1.17 $\begin{cases} y = \frac{1}{3}x + \frac{2}{3} \\ y = \frac{5}{7}x - 2 \end{cases}$

8.1.23 $\begin{cases} x + 2y = 2 \\ -4x + 3y = 25 \end{cases}$

8.1.27 $\begin{cases} 3x - 4y = 11 \\ 2x + 3y = -4 \end{cases}$

8.1.31 $\begin{cases} x = 9 - 2y \\ x + 2y = 13 \end{cases}$

8.1.33 $\begin{cases} y = 3x - 5 \\ 21x - 35 = 7y \end{cases}$

For the following questions: a. Write the cost function, **C**. **b.** Write the revenue function, **R**. **c.** Determine the break-even point. Describe what this means.

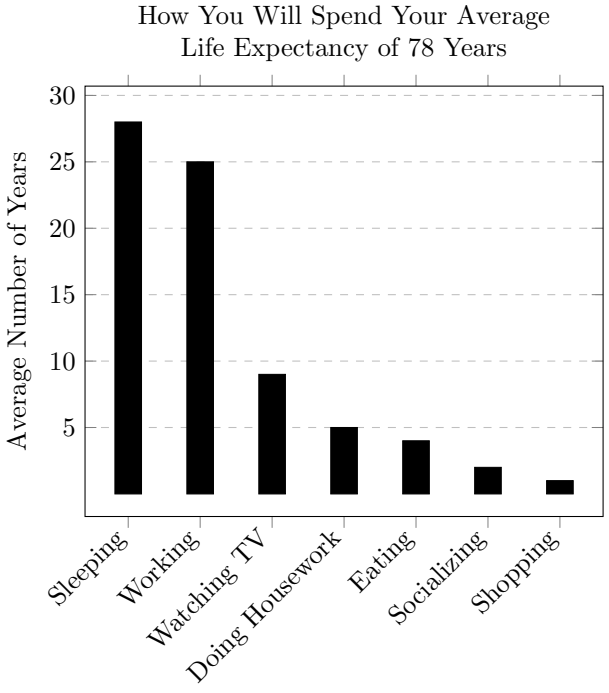
8.1.61 A company that manufactures small canoes has a fixed cost of $18,000. It costs $20 to produce each canoe. The selling price is $80 per canoe. (In solving this problem, let x represent the number of canoes produced and sold.)

8.1.79 A hotel has 200 rooms. Those with kitchen facilities rent for $100 per night and those without kitchen facilities rent for $80 per night. On a night when the hotel was completely occupied, revenues were $17,000. How many of each type of room does the hotel have?

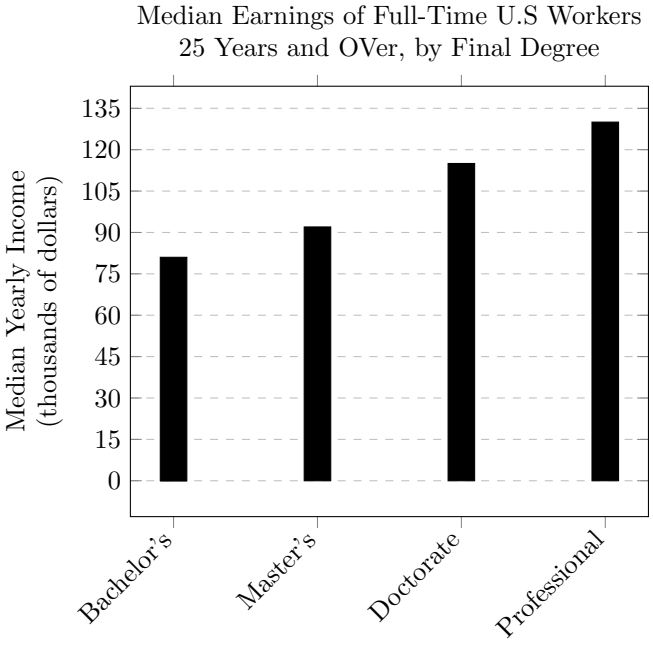
8.1.82 When an airplane flies with the wind, it travels 800 miles in 4 hours. Against the wind, it takes 5 hours to cover the same distance. Find the plane's rate in still air and the rate of the wind.

MAT171 Homework Section 1.3b Models and Applications

1.3.1 According to the American Bureau of Labor Statistics, you will devote 37 years to sleeping and watching TV. The number of years sleeping will exceed the number of years watching TV by 19. Over your lifetime, how many years will you spend on each of these activities? Use the graph below to answer the question.



1.3.2 Based on the graph from the U.S. Census Bureau, the median yearly salary of an American whose final degree is a master's is \$70 thousand less than twice that of an American whose final degree is a bachelor's. Combined two people with each of these educational attainments earn \$173 thousand. Find the median yearly salary of Americans with each of these final degrees.



1.3.21 You invested \$7000 in two accounts paying 6% and 8% annual interest. If the total interest earned for the year was \$520, how much was invested at each rate?

1.3.23 Things did not go quite as planned. You invested \$8000, part of it in stock that paid 12% annual interest. However, the rest of the money suffered a 5% loss. If the total annual income from both investments was \$620, how much was invested at each rate?