Student Name:_____

Instructor: Taryn Laird

Math 112 Section:_____

Directions: *Show all work, and answer each question that is asked. Explanations should be given in complete sentences. All graphs should be drawn accurately on this sheet, and be fully labeled.*

1. A salesperson is paid a weekly salary of $800, plus a commission of 7% of all her sales for the week. Express her weekly income in terms of the weekly sales amount.

Is this a function? How do you know?

What is an appropriate domain?

2. The stopping distance of a car, d, as a function of its speed, v, is given by the formula $d = kv^2$, where k is a constant that is dependent on the specific car and conditions of the road. Suppose a certain car traveling 60 mph requires 162 feet to stop.
Find the constant k.

Use the information from above to approximate the stopping distance for this car traveling at 80 mph.
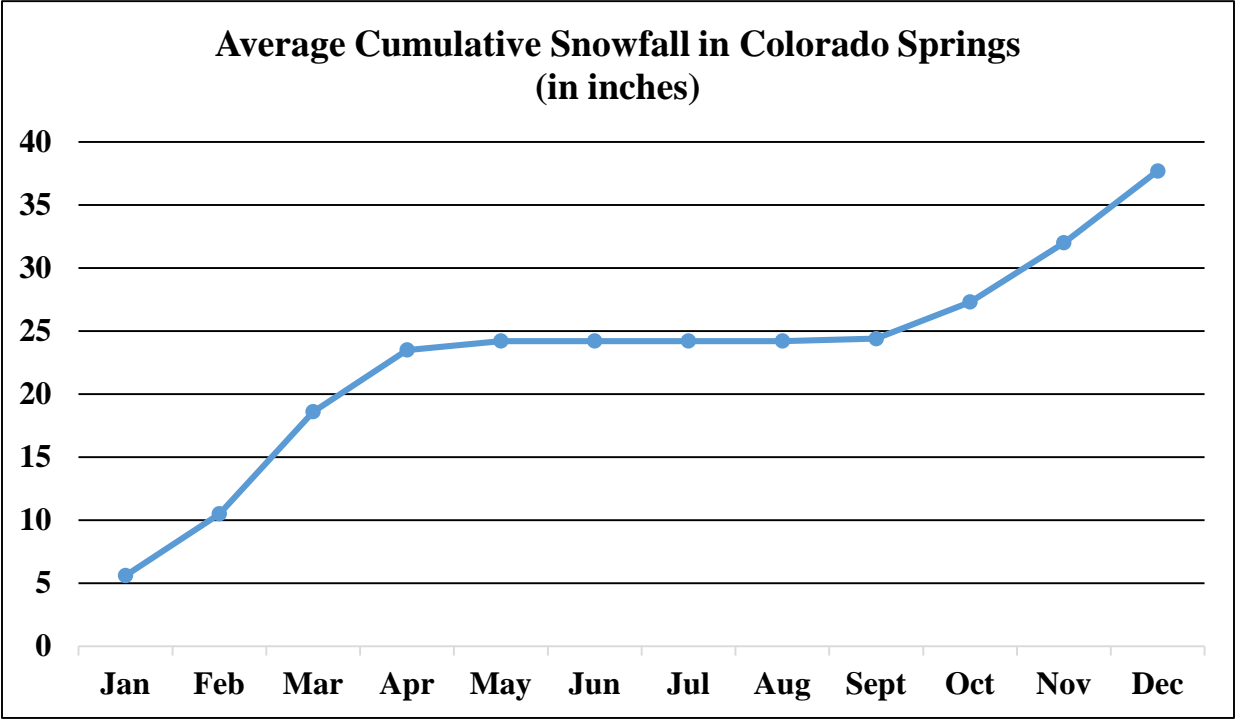
3. Test market data shows that changing the price of a product changes the demand (the number of units that people are will to purchase). For a certain product, the test market data indicates the following:

Purchase price (dollars)	1	2	3	4
Demand (# of units)	45,000	40,000	30,000	15,000

Does this table indicate that purchase price is a function of demand? Why or why not?

Does this table indicate that demand is a function of purchase price? Why or why not?

4. The average cumulative snowfall in Colorado Springs by month is shown in the graph below.

Average Cumulative Snowfall in Colorado Springs
(in inches)

Does this graph represent cumulative snowfall as a function of the month? Why or why not?

What is the average annual cumulative snowfall in Colorado Springs?

What is the approximate average snowfall in December?

During which month is average snowfall the greatest? How do you know?