1. A town has an initial population of 30000. The town's population for the next 9 years is provided below. Which type of function would be most appropriate to model the town's population?

Year	1	2	3	4	5	6	7	8	9
Pop	30055	30097	30147	30205	30255	30297	30347	30405	30455

2. For the information provided below, construct a linear model that describes the total distance of the path, D, in terms of the time spent on a particular path *if we know that the time spent on each path was equal.*

   A bicyclist is training for a race on a hilly path. Their bike keeps track of their speed at any time, but not the distance traveled. Their speed traveling up a hill is 4 mph, 8 mph when traveling down a hill, and 5 mph when traveling along a flat portion.

3. For the information provided below, construct a linear model that describes her total budget, B, as a function of the number of months, x she is at UF.

Aubrey is a college student going into her first year at UF. She will receive Bright Futures, which covers her tuition plus a $1000 educational expense each year. Before college, Aubrey saved up $11000. She knows she will need to pay $700 in rent a month, $50 for food a week, and $40 in other weekly expenses.

4. What is the **best** way to describe the domain of the scenario below?

Hannah plans to pay off a no-interest loan from her parents. Her loan balance is $1,000. She plans to pay $35 at the end of every week until her balance is $0. How many weeks will it be until she has paid off her loan?

5. What is the **best** way to describe the domain of the scenario below?

Hannah plans to pay off a no-interest loan from her parents. Her loan balance is $1,000. She plans to pay $35 at the end of every week until her balance is $0. How many weeks will it be until she has paid off her loan?

6. For the information provided below, construct a linear model that describes her total costs, C, as a function of the number of months, x she is at UF.

Aubrey is a college student going into her first year at UF. She will receive Bright Futures, which covers her tuition plus a $400 educational expense each year. Before college, Aubrey saved up $7000. She knows she will need to pay $900 in rent a month, $80 for food a week, and $56 in other weekly expenses.

7. For the information below, construct a linear model that describes the total time T spent on the path in terms of the distance of a particular part of the path *if we know that the time spent on each path was equal.*

   A bicyclist is training for a race on a hilly path. Their bike keeps track of their speed at any time, but not the distance traveled. Their speed traveling up a hill is 4 mph, 11 mph when traveling down a hill, and 7 mph when traveling along a flat portion.

8. Using the situation below, construct a linear model that describes the cost of the coffee beans $C(h)$ in terms of the weight of the high-quality coffee beans h.

Veronica needs to prepare 120 of blended coffee beans selling for $3.37 per pound. She has a high-quality bean that sells for $3.91 a pound and a low-quality bean that sells for $2.85 a pound.

9. A town has an initial population of 20000. The town's population for the next 9 years is provided below. Which type of function would be most appropriate to model the town's population?

Year	1	2	3	4	5	6	7	8	9
Pop	20200	20800	23200	32800	71200	224800	839200	3296800	1312720

10. Using the situation below, construct a linear model that describes the cost of the coffee beans $C(h)$ in terms of the weight of the low-quality coffee beans h.

Veronica needs to prepare 120 of blended coffee beans selling for $2.69 per pound. She has a high-quality bean that sells for $3.89 a pound and a low-quality bean that sells for $2.11 a pound.