January 30: Modeling with a graph, table, and linear equation

> Answer the questions in the spaces provided on the question sheets. Be sure to **show your work to earn full credit.** You **MAY** use a calculator to help you. If you run out of room for an answer, raise your hand to ask for an extra piece of paper.

Name and period: _____

1) Find the 100th term of the arithmetic sequence $(5, 7, 9, 11, \ldots)$.

2) Find the 100th term of the arithmetic sequence $(3, 5, 7, 9, \ldots)$.

3) Find the 30th term of the arithmetic sequence $(-2, 2, 6, 10, \ldots)$.

4) Find the 20th term of the arithmetic sequence $(-5, -1, 3, 7, \ldots)$.

5) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	3
6	11
30	

6) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	2
3	-7
20	

7) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	5
3	10
50	

8) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	2
6	5
30	

9) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	3
6	11
	83

13) A machine salesperson earns a base salary of $40,000 plus a commission of $6000 for every machine he sells. What would be the salespersonś income if he sold 250 machines?

14) Mr. Thomas is on a diet. He currently weighs 280 pounds. He loses 4 pounds per month. How much will Mr. Thomas weigh after 5 months?

10) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	2
3	-7
	-118

15) Jamal opens a savings account with $500. He saves $150 per month. Assume that he does not withdraw money or make any additional deposits. What will the account balance be after 3 months?

16) The population of Bay Village is 35,000 today. Every year the population of Bay Village increases by 750 people. What will the population be in 10 years?

11) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	5
3	10
	130

17) A machine salesperson earns a base salary of $40,000 plus a commission of $6000 for every machine he sells. How many machines will he have to sell to earn a total of $64,000

12) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	2
6	5
	50

18) Mr. Thomas is on a diet. He currently weighs 280 pounds. He loses 4 pounds per month. After how many months will Mr. Thompson reach his goal weight of 200 pounds?

19) Jamal opens a savings account with $500. He saves $150 per month. Assume that he does not withdraw money or make any additional deposits. After how many months will Paul have more than $2,000?

20) The population of Bay Village is 35,000 today. Every year the population of Bay Village increases by 750 people. When will the population reach 41,000?