

January 28: Modeling with a graph 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 $(5, 7, 9, 11, \dots)$. 6) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	2
3	-7
20	

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

- 3) Find the 30th term of the arithmetic sequence $(-2, 2, 6, 10, \dots)$. 7) Suppose the table represents a linear relationship, and find the missing value.

x	y
0	5
3	10
50	

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

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

x	y
0	3
6	11
30	

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 salesperson's 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?

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

x	y
0	5
3	10
	130

- 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?

- 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?