Name_____ TNReadiness Homework
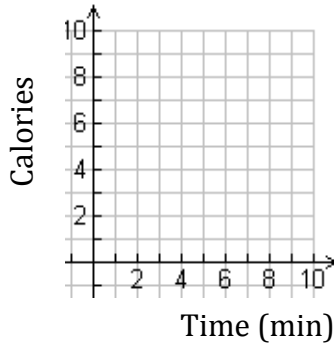
1. Juan is running on a treadmill. The table shows the number of calories Juan burns as a function of time.

| Time(min)	Calories
3	9
6	18
9	27
12	36

a. Explain how you can tell that this relationship is linear just by using the table.

b. Create a graph of the data.

Time (min)

2. Cecilia has $30 to spend at a carnival. Admission costs $5, lunch will cost $6 and each ride ticket costs $1.25. Write an inequality to represent the number of ride tickets x that Cecilia can buy.

3. Tony wants to plant at least 40 acres of corn and at least 50 acres of soybeans. He wants no more than 200 acres of corn and soybeans. (Hint: there should be three inequalities that you graph)
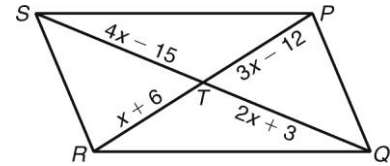

corn (acres)
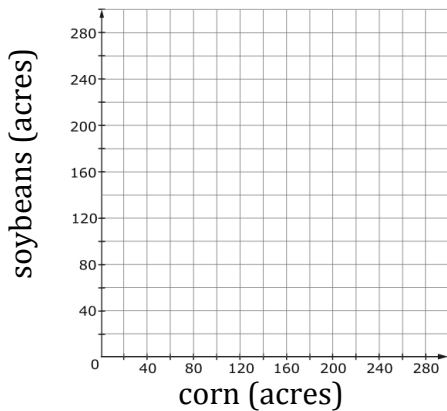
4. Solve 2x + 18 = 3y for x.

5. Solve and graph your solution:
$$4x - 7 > \frac{-12x + 14}{4}$$

6. PQRS is a parallelogram. Find x.

A 3   C 9

B 7   D 15

7. Two records and three tapes cost $31. Three records and two tapes cost $29. Find the cost of each record and of each tape.

8. The population of Huntsville in 2010 was 87,000. The population grows by 3% each year. Which type of function can represent the population of Huntsville t years after 2010?

A Cubic   C Linear

B Exponential   D Quadratic

9. Exponential or Linear? Write an equation for each.

x	y
-2	-5
-1	-1
0	3
1	7
2	11

Cor

x	y
-1	2
0	8
1	32
2	128
3	512

10. Suppose 5,000,000 million people watch the first episode of Phineas and Ferb but the number of viewers decreases by 3.5% each week.

a. Write an exponential function to model the situation.

b. If the pattern continues, how many will watch episode 10?

11. The number of deer in a forest can be modeled by the function $f(t) = 200(1.42)^t$, where **t** is the number of years. Describe what is happening with the deer population, using both numbers from the function in your explanation.

12. Kiptyn deposits $444 into a savings account that gives 2.8% interest per year, compounded quarterly.

a. Write a function K(t) to describe this situation.

b. How much money will Kiptyn have in his account after 9 years? Round to the nearest cent.

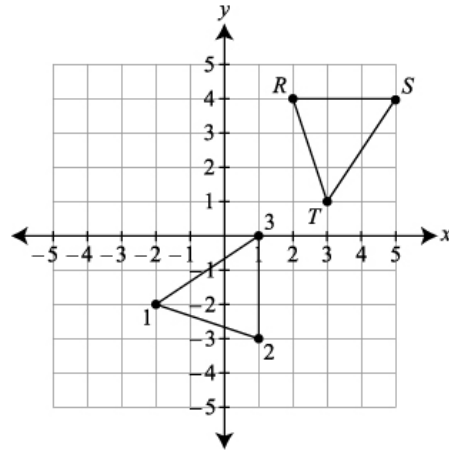13. If the explicit formula of a sequence is $a_n = 5 + 2(n - 1)$, then what is the recursive formula?

14. Write an explicit formula for a function whose fourth term is 3000. Each term after the first is 10 times the previous term.

15. Let a_n = -2(a_{n-1}) + 5 and a_1 = 3. What is the value of a_5?

16. Which is not a function? Explain your answer.

A (7, 1) (8, 1) (9, 1) (10, 1)
B (8, 2) (9, 3) (10,4) (8, 3)

Use the graph below for 17 and 18.

17. Triangle *RST* is translated 5 units left and 3 units down. Then reflected over the line _____ to produce Triangle 123

18. Angle 1 is congruent to Angle _____

19. Consider the functions $f(x)$, $g(x)$, and $h(x)$.

$$f(x) = 25x + 13$$
$$g(x) = x^2$$
$$h(x) = (3)^x$$

Order them from greatest to least based on the value of the function as $x \to \infty$ (as x goes to infinity)
(Think about which function has the largest y value as x gets bigger and bigger)

20. A group of students go out for lunch. If two have hamburgers and five have hot dogs, the bill will be $8. If five have hamburgers and two have hot dogs the bill will be $9.50. What is the price of a hamburger?