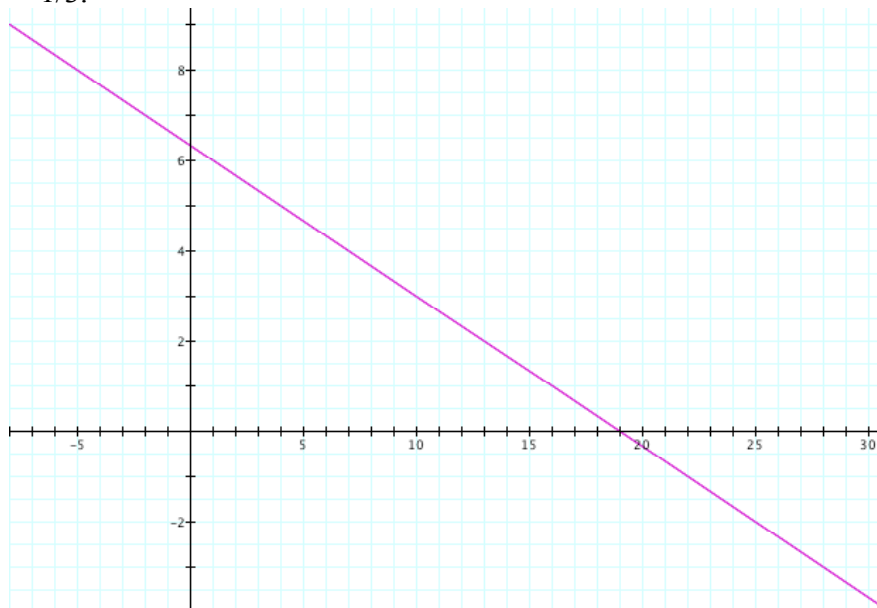


Linear Function Test ☺

1) Use the graph below of the linear function that passes through (4,5) and has a rate of change $m = -1/3$.



- Circle the initial value (b)
- Draw the “calculus triangle” that takes the given point to the initial value
- Label the side lengths of the triangle you just drew. Label the change in x and the change in y. Describe how you would calculate those changes

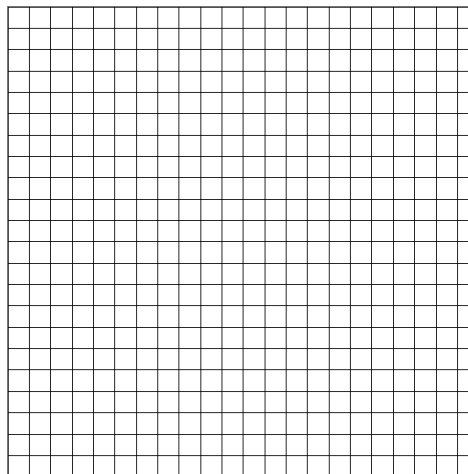
2) During the Superbowl yesterday, the Bears were really trying to cover some yards. After 11 minutes the Bears had a total of 44 yards. After 23 minutes the Bears had a total of 101 yards. Assuming they were gaining yards at a constant rate, find the rate of change.

3) Convert the function $y = -4x + 5$ into $ax + by = c$ form

4) Convert the function $-2x + 4y = 12$ into $y = mx + b$ form

5) My fiancé had a bet with one of his buddies. They wanted to see who could eat the most chicken wings. I showed up a little late, but when I got there, my fiancé was winning by 3 wings. I estimated he was eating 2.5 wings per minute.

- a) Define a linear function in the form $y = mx + b$ that relates the number of wings my fiancé has eaten and the number of minutes I've been there
- b) Graph the linear function in part a



6) Define a linear function in the form $y = mx + b$ with a constant rate of change that has a graph that passes through the points $(3, -4)$ and $(-1, 9)$

7) Write the function definition that would produce the following graph:

