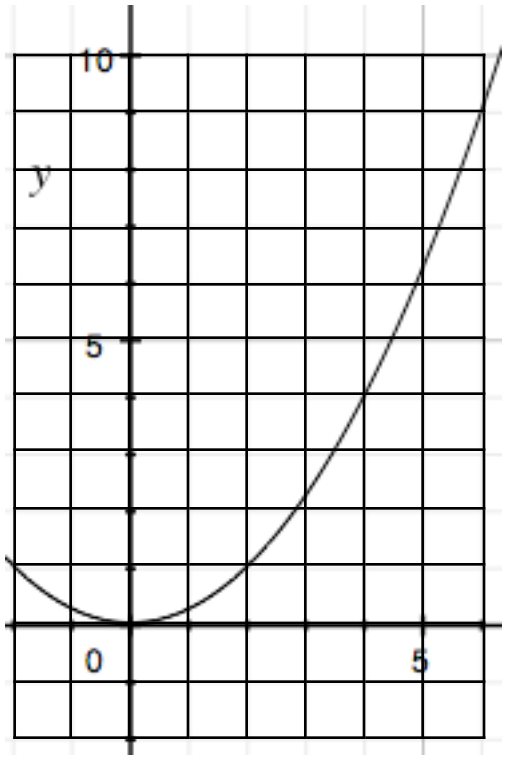
Name: _____ **TC**

Classwork 23



1. a) What can we draw on a graph that will allow us to approximate the slope (speed) at a single point?

   b) Use the graph to approximate the exact slope at $x = 3$.

   c) If the equation is $f(x) = 1/4x^2$, find the slope between $x = 3$ and $x = 3.001$.

2. Fill in the blanks for each pattern and answer the questions.

a) 1, 1, 2, 3, 5, 8, 13, 21, _____, _____

b) Explain what you did to get your answers for (a)

c) Write a formula that expresses what you did.

d) 1, 4, 9, 16, 25, 36, _____ , _____

e) Explain what you did to get your answers for (a)

f) Write a formula that expresses what you did.

Recursive Formula:

Explicit Formula:

3. Find the limit of the expression $\sqrt{72 + 72 + 72 + 72 + 72 \ldots}$

4. Evaluate each expression:

a) $\sqrt{72}$ b) $\sqrt{72 + \sqrt{72}}$ c) $\sqrt{72 + \sqrt{72 + \sqrt{72}}}$

d) $\sqrt{72 + \sqrt{72 + \sqrt{72 + \sqrt{72}}}}$

e) $\sqrt{72 + \sqrt{72 + \sqrt{72 + \sqrt{72 + \sqrt{72}}}}}$

f) If these are terms in a sequence, what is happening to the difference between t_{n+1} and t_n as $n \to \infty$?