

Name: _____

Section: _____

MATH 120A

QUIZ 2

January 17, 2002

You may use a scientific calculator to complete this quiz. No notes please.

1. (5 points) Let $f(x) = -x^2 + 4x$. Compute

$$\frac{f(x+h) - f(x)}{h}$$

and simplify as much as possible.

2. (5 points) Sammy the squirrel sits in a park 20 feet west and 30 feet north of a birdbath. Sammy sees an acorn on the ground, 20 feet east and 10 feet south of the birdbath, and runs to the acorn at a constant speed of 26 feet per second. The birdbath sits at the center of a circular patch of cobblestone with radius 10 feet.

(a) Impose a coordinate system with the birdbath at the origin, indicating Sammy's starting point, the location of the acorn, and the circular cobblestone patch.

(b) Give the equation of the line along which Sammy runs.

(c) How much time does Sammy spend running on the cobblestone?