Chapter 2.1: More Cat Velocities
Calculus I

College of the Atlantic. September 29, 2022

The Speed of a Cat

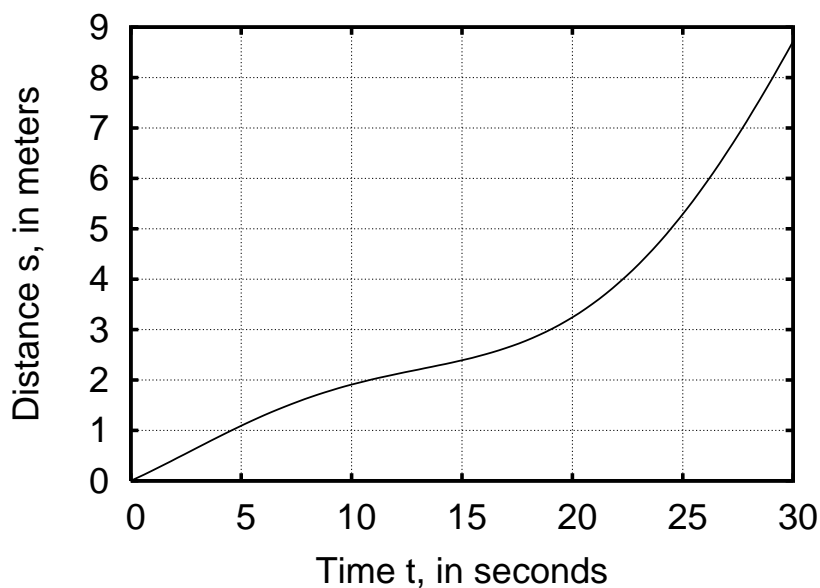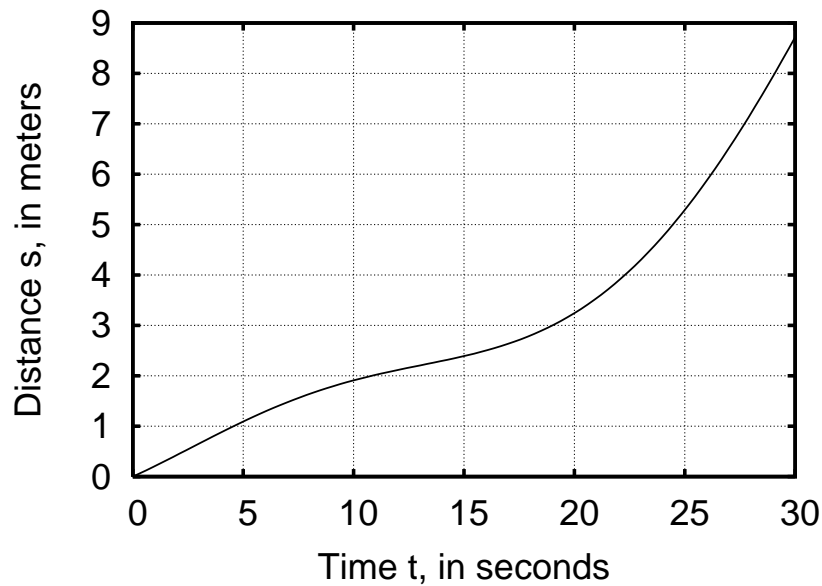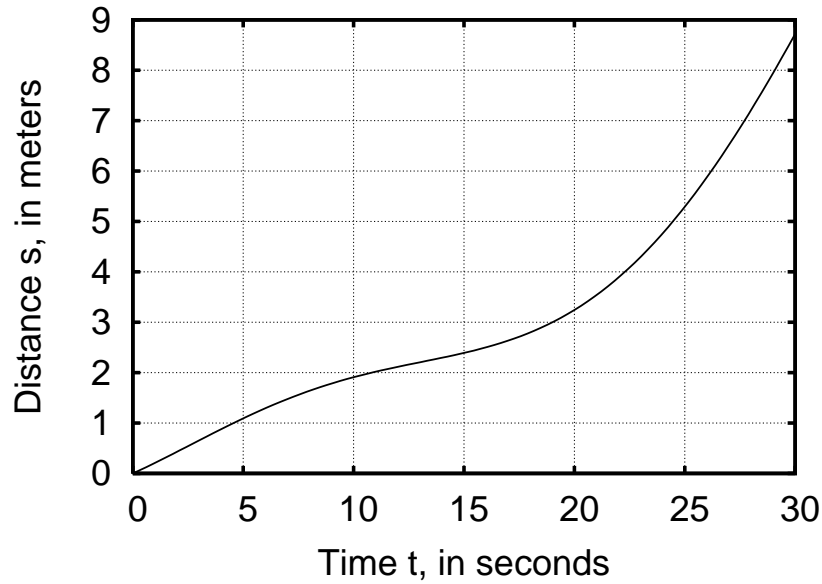

Figure 1: The distance s traveled by a cat as a function of time t.

1. What is the average velocity of the cat from $t = 15$ to $t = 30$?

2. What is the average velocity of the cat from $t = 15$ to $t = 25$?

3. What is the average velocity of the cat from $t = 15$ to $t = 10$?

4. What is your estimate of the instantaneous velocity of the cat at $t = 15$?

5. What is your estimate of the instantaneous velocity of the cat at $t = 10$?

(There are additional copies of the figure on the other side of this paper.)

Suppose a cat moves in a straight line such that its distance from its starting point is given by the function $x(t) = 2\sqrt{3t}$.

1. What is the average speed of the cat between times $t = 2$ and $t = 6$?

2. What is the average speed of the cat between times $t = 6$ and $t = 12$?

3. Write down an expression for the average speed of the cat between times $t = 2.0$ and $t = 2+h$.