

Math 120 A Spring 2018  
Mid-Term Exam Number One  
April 19, 2018  
Answers

There were two versions of the exam.

Version A: In version A, in problem 1, you bicycle at 13 meters per second.

1. (a)  $x = 33 - 6.6t, y = 11.2t$  (b)  $t = 3.77227...$  seconds.

2. 2.969848... hours

3.

$$\text{area} = \begin{cases} 3x & \text{if } 0 \leq x \leq 4, \\ 12 + \frac{1}{2}(x - 4)(x + 2) & \text{if } 4 \leq x \leq 10. \end{cases}$$

4. (a)  $c = \frac{1}{2}$  is the only solution (b)  $8x - 6$

Version B: In version B, in problem 1, you bicycle at 4 meters per second.

1. (a)  $x = 32 - 3.2t, y = 2.4t$  (b)  $t = 5.0614...$  seconds

2. 3.7947... hours

3.

$$\text{area} = \begin{cases} 6x & \text{if } 0 \leq x \leq 8, \\ 48 + \frac{1}{2}(x - 8)(x + 8) & \text{if } 8 \leq x \leq 20. \end{cases}$$

4. (a)  $c = \frac{1}{3}$  is the only solution (b)  $2x - 8$