

Math 120 B, C - Autumn 2008
Mid-Term Exam Number One
October 16, 2008

Answers

There were two versions of the exam.

Version A - In problem 1, Jo initially runs SOUTH.

1.

$$D(t) = \begin{cases} 3t & \text{if } 0 \leq t \leq 90, \\ \sqrt{270^2 + (4(t - 90))^2} & \text{if } 90 \leq t \leq 121, \\ \sqrt{124^2 + (270 + 2.5(t - 121))^2} & \text{if } 121 \leq t \leq 251, \end{cases}$$

2. 115.698 meters

3. 1.75719 seconds

4. $8a - 6$

Version B - In problem 1, Jo initially runs WEST.

1.

$$D(t) = \begin{cases} 2t & \text{if } 0 \leq t \leq 70, \\ \sqrt{140^2 + (3(t - 70))^2} & \text{if } 70 \leq t \leq 103, \\ \sqrt{99^2 + (-140 - 3.5(t - 103))^2} & \text{if } 103 \leq t \leq 188, \end{cases}$$

2. 64.743 meters

3. 1.63775 seconds

4. $12a - 8$