Math 120 A Winter 2017
Mid-Term Exam Number One
January 26, 2017

There were two versions.

Version A

In version A, in problem 1, Paula starts from the point $(0, 3)$.

1. $t = 0$ and $t = \frac{54}{37}$.

2. (a) 16.88723 km east, 1.95488 km south (b) 2.80604 km east, 7.33887 km south

3.
$$\text{area} = \begin{cases} -\frac{5}{6}x^2 + 9x & \text{if } 0 \leq x \leq 3 \\ 4x + \frac{15}{2} & \text{if } 3 \leq x \leq 10. \end{cases}$$

4. (a) $14x + 7h + 1$ (b) Center is $(\frac{2}{3}, -5)$ and radius is 6

Version B

In version B, in problem 1, Paula starts from the point $(0, 5)$.

1. $t = 0$ and $t = \frac{58}{15}$.

2. (a) 10.99492 km east, 0.33418 km south (b) $\frac{13}{37}$ km east, $\frac{78}{37}$ km south

3.
$$\text{area} = \begin{cases} -\frac{5}{6}x^2 + 18x & \text{if } 0 \leq x \leq 6 \\ 8x + 30 & \text{if } 6 \leq x \leq 20. \end{cases}$$

4. (a) $10x + 5h - 1$ (b) Center is $(2, -\frac{4}{5})$ and radius is 5.