

Math 120 A Winter 2017
Mid-Term Exam Number Two
February 23, 2017
Answers

There were two versions.

In Version A, in problem 1, you have 1200 meters of fencing.

1. The rectangle should be 200 meters (horizontal side) by 150 meters.

2. (a) $g^{-1}(x) = -3 - \sqrt{x+6}$ (b) The fixed points are $\frac{1 \pm \sqrt{85}}{6}$.

3. 161.1777 years after 2000

4. (a)

$$g(x) = \begin{cases} 2x + 5 & \text{if } x \geq -\frac{7}{2}, \\ -2x - 9 & \text{if } x < -\frac{7}{2}. \end{cases}$$

(b) $x = \frac{5}{4}$ (c) The domain is $-3 \leq x \leq 6$ and the range is $-46 \leq y \leq -11$.

In Version B, in problem 1, you have 900 meters of fencing.

1. The rectangle should be 150 meters (horizontal side) by 112.5 meters.

2. (a) $g^{-1}(x) = -2 - \sqrt{x+5}$ (b) The fixed points are $\frac{1 \pm \sqrt{209}}{8}$.

3. 134.299 years after 2000

4. (a)

$$\begin{cases} 3x + 7 & \text{if } x \geq -\frac{8}{3}, \\ -3x - 9 & \text{if } x < -\frac{8}{3}. \end{cases}$$

(b) $x = \frac{3}{5}$ (c) The domain is $-1 \leq x \leq 7$ and the range is $-21 \leq y \leq -13$.