

Math 120 A - Spring 2009  
Mid-Term Exam Number One  
April 23, 2009  
Answers

There were two versions of the exam.

Version A - In problem 1, the radius of the forest was 12 km.

1. 3.2272 hours.
2.  $P$  is the point (2.88235, 6.37903).
3. The orchard's maximum possible total output is 7717.5 kg.
4. (a)  $x = \frac{2}{5}$  is the only solution. (b) One function that works is  $h(x) = \sqrt{10}x + \frac{-5}{1 + \sqrt{10}}$ .

Version B - In problem 1, the radius of the forest was 9 km.

1. 2.0295 hours.
2.  $P$  is the point (4.653846, 9.96703).
3. The orchard's maximum possible total output is 9680 kg.
4. (a)  $x = -\frac{2}{7}$  is the only solution. (b) One function that works is  $h(x) = \sqrt{8}x + \frac{-7}{1 + \sqrt{8}}$ .