There were two versions of the exam.

**Version A:** In problem 1, the population of city A triples every 35 years.

1. (a) 11.76689 years after 2000 (b) 3.22924 years
2. (a) 214.285 mg/ml (b) 2.2857 minutes
3. 51.7451 by 206.980 meters
4. (a) The horizontal asymptote is \( y = \frac{3}{2} \) and the vertical asymptote is \( x = -\frac{3}{2} \).
   
   (b) \( g^{-1}(x) = \frac{3x - 4}{3 - 2x} \)

   (c) The fixed points are \( x = \pm \sqrt{2} \).

**Version B:** In problem 1, the population of city A triples every 22 years.

1. (a) 40.17275 years after 2000 (b) 6.182385 years
2. (a) 123.875 mg/ml (b) 17.5 minutes
3. 11.945 by 35.837 meters
4. (a) The horizontal asymptote is \( y = \frac{3}{2} \) and the vertical asymptote is \( x = -\frac{7}{2} \).
   
   (b) \( g^{-1}(x) = \frac{14x - 20}{6 - 4x} \)

   (c) The fixed points are \(-1 \pm \frac{1}{2} \sqrt{24} \).