7. a) $x + y = 6.2$
$x^2 + y^2 = 25$

b) The rectangle measures 1.4 units by 4.8 units.

c) 1) Yes. The dimensions of the rectangle must be $(3.1 \pm \sqrt{8.29})$ units, therefore approximately 5.98 units for the length and 0.22 units for the width.

2) No, it is impossible. By solving the system of equations $x + y = 6.$
$x^2 + y^2 = 49$, you only obtain ordered pairs of which one of the coordinates is negative. You also know that the diagonal of a rectangle can never be greater than the sum of the measurements of its length and width because, in a triangle, the sum of the measurements of two sides is always greater than the measurement of the third side.

10. To the nearest metre, the first cyclist would have
travelled 17 m. or 16 m

11. a) He would need 20 s.
   b) 800 m from his starting point.

14. a) $A_c(x) = 2\pi x^2 + 30\pi x$ **b)** For $x = 10.2$.
   $A_p(x) = 80x + 800$