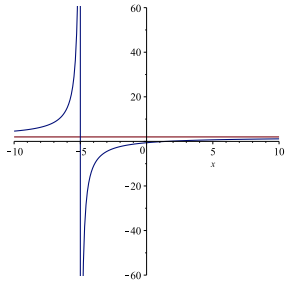
Problem 1 : tower is 14.13 m tall, angle γ is 0.62 rad

Problem 2: 9.053 hours.

Problem 3: (a) $\frac{3}{5}\pi$ rad per min , (b) $x(t) = 48\cos(\frac{3}{5}\pi t - \frac{7}{10}\pi)$, $y(t) = 50 + 48\sin(\frac{3}{5}\pi t - \frac{7}{10}\pi)$, (c) (-456507, 35.1672), (d)34.22 m left of the center of the wheel.

Problem 4: (a) $x = -5$, $y = 2$
(b)



(c) Domain is : $x \neq 2$, Range is $x \neq -5$ formula :$f^{-1}(x) = \frac{5x+3}{2-x}$

Problem 5: (a) $P(t) = \begin{cases} 800000(\sqrt[14]{\frac{5}{8}})^t & \text{if } 0 \leq t \leq 14 \\ 473758(\sqrt[180]{2})t & \text{if } t \geq 14 \end{cases}$
(b) 574349
(c) for $t = 8.569$or in 2009 and $t = 61.35$ or in 2061.

Problem 6:(a) $y = \frac{3}{2}x$ (b) $y = 2 - \sqrt{9 - (x-1)^2}$
(c) $2x + h - 1$ (d) $g(x) = \sqrt{(x+3)^2 - (x+3) + 1} + 2$

Problem 7: t= 0.67 h, minimum distance= 6.32 mi