1. False. The horizontal line test determines whether a function is injective.
2. True. Think of reflecting over $y = x$ as switching the x and y coordinates.
3. (a) Factor $x - 2 = (\sqrt{x} + \sqrt{2})(\sqrt{x} - \sqrt{2})$. Then $\frac{x-2}{\sqrt{x}-\sqrt{2}} = \sqrt{x} + \sqrt{2}$, and then the limit $\lim_{x\to 2} \frac{x-2}{\sqrt{x}-\sqrt{2}} = \lim_{x\to 2} \sqrt{x} + \sqrt{2} = 2\sqrt{2}$ by plugging in. (If we tried to plug in first, we would get $\frac{0}{0}$, an indeterminate form.)
   (b) This limit does not exist (DNE, $\nexists$) because $\tan(x)$ oscillates forever when x gets large and does not approach any limiting value.