Problem 2 part a

$$p(x) = \frac{w(x)}{\int_0^1 w(x)dx} \quad \text{and} \quad w(x) = x^{-1/2}$$

$$\int_0^1 x^{-1/2}dx = 2\sqrt{x}\,\Big|_0^1 \quad 2 - 0 = 2$$

so $p(x) = \frac{x^{-1/2}}{2}$ or $\frac{1}{2\sqrt{x}}$

$$\text{cdf} = \int p(x)dx = \int \frac{1}{2\sqrt{x}}dx = \sqrt{x}$$

cdf^{-1} $\quad y = \sqrt{x}$ so $x = y^2$