Suppose you have $1000 to invest. Part of the money is invested in one account giving 2% interest. Part of the money is invested in one account giving 4% interest. After one year, the interest totals $35. How much was invested in each account?

Let $x$ = amount invested in 2% accnt. $y$ = amount invested in 4% accnt.

1. Solve the system of equations for $y$:
   \[ x + y = 1000 \]
   \[ 0.02x + 0.04y = 35 \]
   \[ y = \frac{1000 - x}{0.04} - \frac{35}{0.04} \]
   \[ 0.02x + 40 - 0.04x = 35 \]
   \[ -0.02x = -5 \]
   \[ x = \frac{5}{0.02} = 250 \]

51. \[ \sqrt{x - 5} = -5 \]
   \[ (x - 5) = 250 \]
   \[ x = 255 \]

Graph $\sqrt{x}$

Domain: set of all possible inputs
   Domain: $[0, \infty)$

7.2 Rational Exponents

Yesterday
   \[ \sqrt[3]{8} = 2 \]
   \[ \sqrt[3]{27} = 3 \]

Can never be any

Might be negative
\[ \sqrt[n]{x} = x^{\frac{1}{n}} \]

\[ \sqrt[n]{x} = x^{\frac{1}{n}} \quad \sqrt[n]{x} = x^{\frac{1}{n}} \]

\[ \sqrt[3]{32} = 2 \quad 32^{\frac{1}{3}} \]

\[ \sqrt[5]{95} \approx 1.5518 \]

\[ \sqrt[23]{2} \quad \sqrt[34]{2} \quad \sqrt[28]{2} \]

\[ 2^{\frac{3}{2}} = 2^3 = 8 \]

\[ 3^{\frac{1}{2}} \quad 3^{\frac{4}{2}} = 9 \]

\[ 2^\frac{3}{2} \cdot 2^4 = 2^7 = 128 \]

\[ \frac{3}{6} + \frac{2}{6} = \frac{5}{6} \quad \frac{10}{3} \]

\[ \frac{4}{3} \cdot \frac{3}{2} = \frac{6}{4} \]

\[ (\frac{3}{4})^2 = \frac{9}{16} \]

\[ \frac{2}{3} \cdot \frac{2}{1} = \frac{6}{4} \]

\[ X^{\frac{1}{2}} \cdot X^{\frac{1}{3}} = X^{\frac{5}{6}} \]

\[ \left( y^{\frac{3}{4}} \right)^2 = y^{\frac{3}{2}} \]