

$$\underline{1)} \quad a) \quad 25^{1/2} = 5$$

$$b) \quad 25^{-3/2} = \frac{1}{25^{3/2}} = \frac{1}{5^3} = \frac{1}{125}$$

$$\underline{2)} \quad \underline{\text{Solve equations:}} \quad \begin{cases} x + y = 2 \\ 4y^2 - x^2 = 11 \end{cases}$$

$$\begin{cases} y = 2 - x & (1) \\ 4y^2 - x^2 = 11 & (2) \end{cases}$$

Substitute (1) into (2).

$$4(2-x)^2 - x^2 = 11$$

$$4(4 + x^2 - 4x) - x^2 = 11$$

$$16 + 4x^2 - 16x - x^2 = 11$$

$$3x^2 - 16x + 5 = 0$$

$$3x^2 - 15x - x + 5 = 0$$

$$3x(x-5) - (x-5) = 0$$

$$(x-5)(3x-1) = 0 \Rightarrow x = 5 \text{ or } x = 1/3$$

$$x = 5 \text{ gives } y = 2 - 5 = -3$$

or

$$x = 1/3 \text{ gives } y = 2 - 1/3 = 5/3$$

$$\begin{cases} x = 5 & y = -3 \\ x = 1/3 & y = 5/3 \end{cases}$$