Math Worksheet: Quadratic Equations(1)

1. Solve for x the following equation.

$$\sqrt{2x+13}-x=5$$

$\sqrt{2x+13} = 5 + x$

Square $(2x+3) = (5+x)^2$

Expand and solve $x = -2,\ x = -6$

check solution : solution set $\{-2\}$.

2. Solve, for x, the following equation

$$x^4 - 5x^2 + 6 = 0$$

let $u = x^2$

$u^2 - 5u + 6 = 0$

Solve for u: $u = 3$ and $u = 2$

Solve for x: $x = \pm\sqrt{3}$ and $x = \pm\sqrt{2}$ solution set : $\{\pm\sqrt{3}, -\sqrt{2}, \sqrt{2}, \sqrt{3}\}$

3. The length L of a rectangular field is 10 m more that its width W. The area of the field is 600 m^2. Find the length and width of the field.

$L = W + 10$ Area $= 600 = W \cdot L = W(W+10)$

Expand and solve: $W^2 + 10W - 600 = 0$

$W_1 = 20m$ $W_2 = -30$ (rejected) , $L = 20 + 10 = 30m$

width length