3) $\sqrt{13-4y}=2-y$ | square both sides

$13-4y=(2-y)^2$

$13-4y=4-4y+y^2$ | $+4y-4$

$9=y^2$ | $\sqrt{\ }$

$y=\pm 3$

$y_1=3,\ y_2=-3$

Check: $\sqrt{13-12}=2-3$ false, $y_1=3$ not a valid solution

$\sqrt{13+12}=2+3$ ✓

$L=\{-3\}$

4) $x+2\sqrt{x}=3$ | $-x$ (in order to isolate the radical)

$2\sqrt{x}=3-x$ | square both sides

$4x=(3-x)^2$

$4x=9-6x+x^2$ | $-4x$

$0=9-10x+x^2$ quadratic equation

$$x_{1,2}=\frac{-b\pm\sqrt{b^2-4ac}}{2a}=\frac{10\pm\sqrt{100-36}}{2}=\frac{10\pm 8}{2}$$

$x_1=9,\ x_2=1$

Check: $9+2\sqrt{9}=3$ false, $x_1=9$ not a valid solution

$1+2\sqrt{1}=3$ ✓

$L=\{1\}$

5) $\sqrt{2x+5}-2\sqrt{x-1}=1$ | $+2\sqrt{x-1}$ (isolate one radical on the left side)

$\sqrt{2x+5}=1+2\sqrt{x-1}$ | square both sides

$2x+5=(1+2\sqrt{x-1})^2$

$2x+5=1+4\sqrt{x-1}+4(x-1)$

$2x+5=1+4\sqrt{x-1}+4x-4$ | $-4x+3$

$-2x+8=4\sqrt{x-1}$ | $\div 2$

$-x+4=2\sqrt{x-1}$ | square both sides

$x^2-8x+16=4(x-1)$ | $-4x+4$

$x^2-12x+20=0$ quadratic equation

$$x_{1,2}=\frac{-b\pm\sqrt{b^2-4ac}}{2a}=\frac{12\pm\sqrt{144-80}}{2}=\frac{12\pm 8}{2}$$

$x_1=10,\ x_2=2$

Check: $\sqrt{25}-2\sqrt{9}=1$ false, $x_1=10$ not a valid solution

$\sqrt{9}-2\sqrt{1}=1$ ✓

$L=\{2\}$