

Question 22488

9a.  $\sqrt{5y+1}+4=0$  ,  $\sqrt{5y+1}=-4$  . Range of square root on the left:  $y \geq -\frac{1}{5}$  .

Exponentiating both sides of equation, obtain  $5y+1=16, y=\frac{15}{5}=3$  . This solution satisfies the domain, so this is the solution of equation.

9b.  $1+\sqrt{x+1}=\sqrt{2x+3}$  . First, find domains of squares:  $x \geq -1, x \geq \frac{-3}{2} \Rightarrow x \geq -1$  .

Exponentiating both sides of equation, obtain

$1+x+1+2\sqrt{x+1}=2x+3, 2\sqrt{x+1}=x+1, 4(x+1)=x^2+2x+1 \Rightarrow x_{1,2}=-1; 3$  . Both solutions satisfy domains of squares, hence the solution of equation is  $x=-1; x=3$  .