24. Which of the following is smallest?

A $10-3\sqrt{11}$ B $8-3\sqrt{7}$ C $5-2\sqrt{6}$ D $9-4\sqrt{5}$ E $7-4\sqrt{3}$

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24. A Each of the five expressions can be written in the form $\sqrt{x}-\sqrt{x-1}$, where x is in turn 100, 64, 25, 81 and 49. As $(\sqrt{x}-\sqrt{x-1})(\sqrt{x}+\sqrt{x-1})=x-(x-1)=1$, we can write $\left(\sqrt{x}-\sqrt{x-1}\right)=\dfrac{1}{(\sqrt{x}+\sqrt{x-1})}$. Since $(\sqrt{x}+\sqrt{x-1})$ increases with x, then $(\sqrt{x}-\sqrt{x-1})$ must decrease with x. Therefore, of the given expressions, the one corresponding to the largest value of x is the smallest. This is $\sqrt{100}-\sqrt{99}$ which is $10-3\sqrt{11}$.