10. Evaluate Limit

$$\lim_{x \to 0} \frac{\sqrt{2x+4} - 2}{x}$$

substitute will lead to indeterminate form $\frac{0}{0}$

Therefore we need to manipulate

$$\frac{\sqrt{2x+4} - 2}{x} \left(\frac{\sqrt{2x+4} + 2}{\sqrt{2x+4} + 2} \right)$$

$$\frac{\left(\sqrt{2x+4}\right)^2 - 2^2}{x\left(\sqrt{2x+4} + 2\right)} = \frac{2x+4-4}{x\left(\sqrt{2x+4} + 2\right)}$$

$$\frac{2x}{x\left(\sqrt{2x+4} + 2\right)} = \frac{2}{\sqrt{2x+4} + 2}$$

now we evaluate a $x = 0$

$$\frac{2}{\sqrt{2(0)+4}+2} = \frac{2}{2+2} = \frac{1}{2}$$