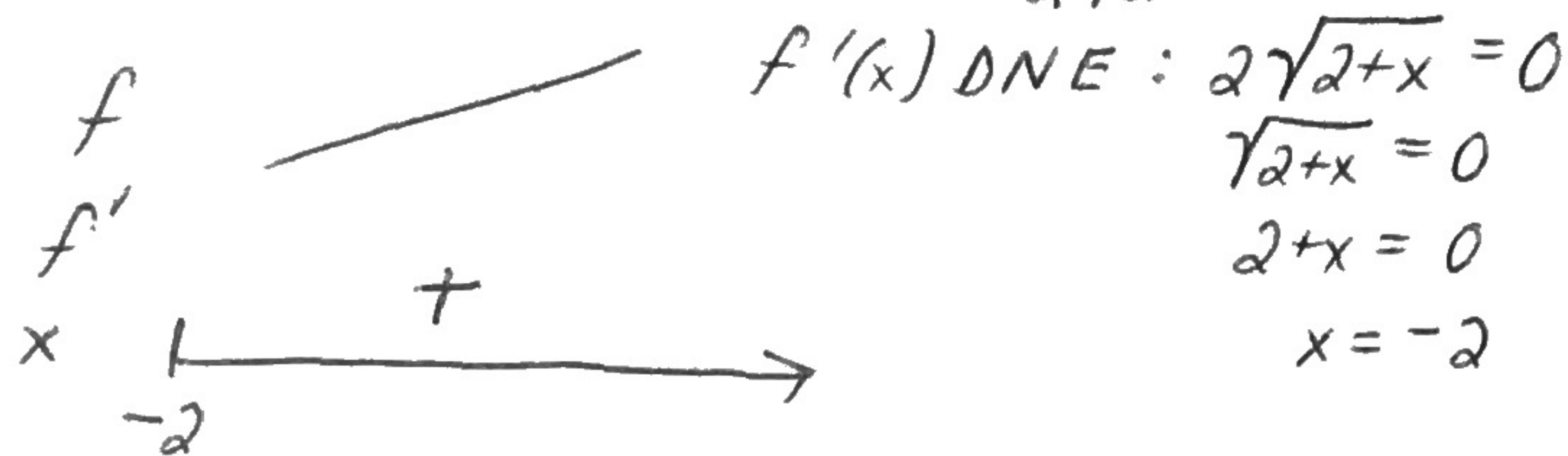


Ex 2:  $f(x) = \sqrt{2+x}$

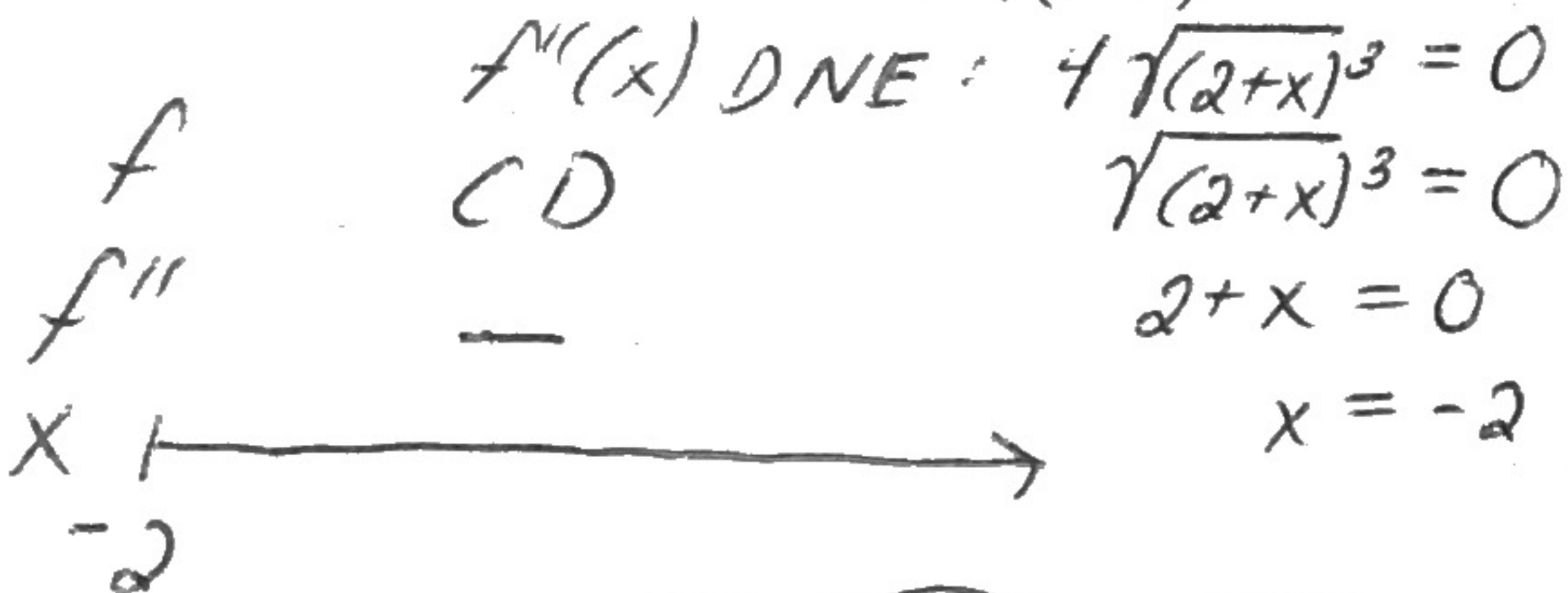
Domain:  $x \geq -2$

Endpoint:  $x = -2$

Critical Points:  $f'(x) = \frac{1}{2}(2+x)^{-\frac{1}{2}} \cdot 1$   
 $= \frac{1}{2\sqrt{2+x}} \neq 0$



PPOI:  $f''(x) = -\frac{1}{4}(2+x)^{-\frac{3}{2}} \cdot 1$   
 $= \frac{-1}{4\sqrt{(2+x)^3}} \neq 0$



Inc:  $(-2, \infty)$  b/c  $f'$  is +

Dec: None b/c  $f'$  is not -

L. Max: None b/c  $f'$  does not change from + to -

L. Min: None b/c  $f'$  does not change from - to +

CU: None b/c  $f''$  is not +

CD:  $(-2, \infty)$  b/c  $f''$  is -

POI: None b/c  $f''$  does not change sign

A. Max: None b/c  $\lim_{x \rightarrow \infty} f(x) = \infty$

A. Min:  $(-2, 0)$  b/c this is an endpoint and  $f$  increases always after  $x > -2$ .