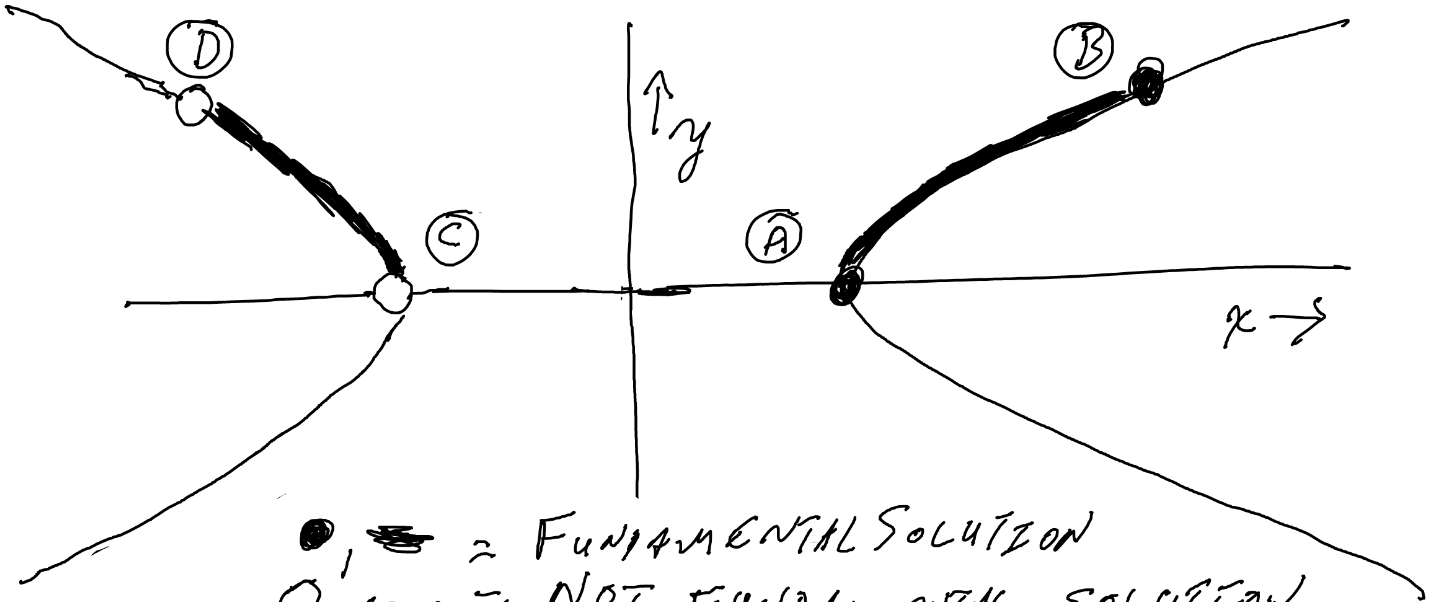
WE CONSIDER THE EQUATION (1)

(1) $x^2 - Dy^2 = N,$

FOR $D > 0$, D NOT SQUARE, $N \neq 0, 1$.
LET t, u BE THE MINIMAL POSITIVE SOLUTIONS TO

(2) $t^2 - Du^2 = 1$.

FOR $N > 0$, WE GRAPH (1) FOR x, y REAL, WITH THICKER LINES FOR FUNDAMENTAL SOLUTIONS, AS DEFINED BY NAGELL.



●, ▬ = FUNDAMENTAL SOLUTION
○, — = NOT FUNDAMENTAL SOLUTION

(A) $x = \sqrt{N}$, $y = 0$

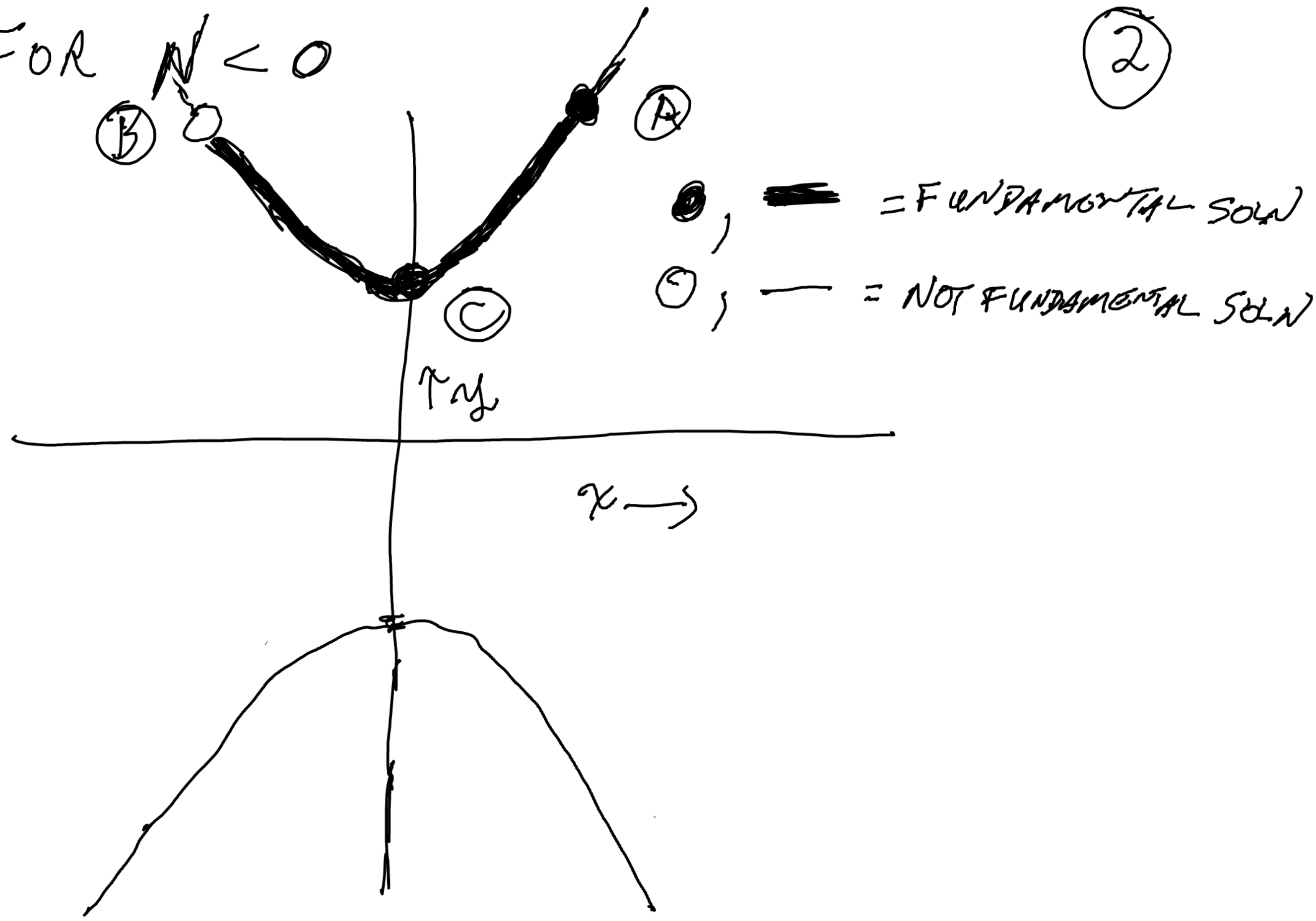
(B) $x = \sqrt{\frac{1}{2}N(t+1)} = u\sqrt{\frac{ND}{2(t-1)}}$, $y = u\sqrt{\frac{N}{2(t+1)}} = \sqrt{\frac{N(t-1)}{2D}}$

(C), (D) SAME y AS (A), (B); x HAS SIGN OPPOSITE (A), (B)

(B) $\approx$ (D), (A) $\approx$ (C)

FOR (B), $x/y = (t+1)/u = uD/(t-1)$

FOR $N < 0$



(A) $x = \sqrt{\frac{|N|(t-1)}{2}} = u\sqrt{\frac{|N|\,D}{2(t+1)}}$, $y = u\sqrt{\frac{|N|}{2(t-1)}} = \sqrt{\frac{|N|(t+1)}{2D}}$

(B) x IS NEGATIVE OF (A), y IS SAME AS (A)

(C) $x = 0$, $y = \sqrt{\frac{|N|}{D}}$

(A) $\simeq$ (B)

FOR (A), $\frac{x}{y} = \frac{t-1}{u} = \frac{uD}{t+1}$