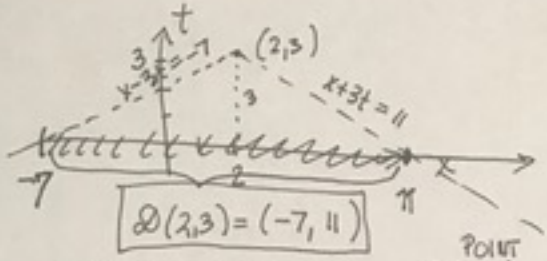
① → In class.

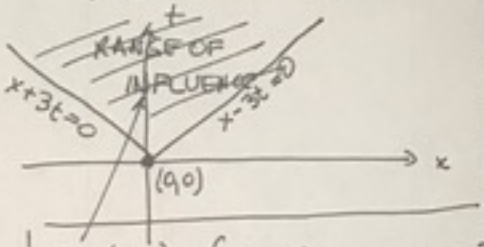
② $$u(x,t) = \frac{1}{2\cdot 3}\int_{x-3t}^{x+3t} \xi \, d\xi = \frac{1}{6}\left[\frac{\xi^2}{2}\right]_{x-3t}^{x+3t} = \frac{1}{12}\left[(x+3t)^2-(x-3t)^2\right]$$

$$= \frac{1}{12}\left[12xt\right] = \boxed{xt}$$



$\mathcal{D}(2,3) = (-7, 11)$

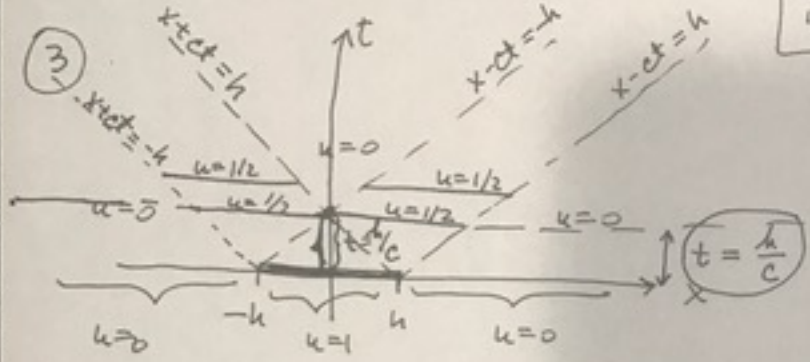
Domain of dependence of POINT (2,3).



$\mathcal{R}(0,0) = \{(x,t) \mid -3t \le x \le 3t\}$, $t>0$

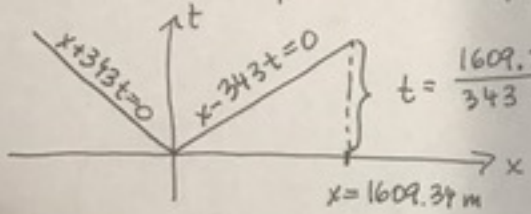
RANGE OF INFLUENCE OF (0,0).

③



The 2 pulses will separate at $\boxed{t \Rightarrow \frac{h}{c}}$.

④



$$t = \frac{1609.34\ m}{343\ m/s} = \boxed{4.692\ sec}$$

⑤ $$t = \frac{1609.34}{1484} = \boxed{1.08\ sec}$$

⑥ Solved in class.