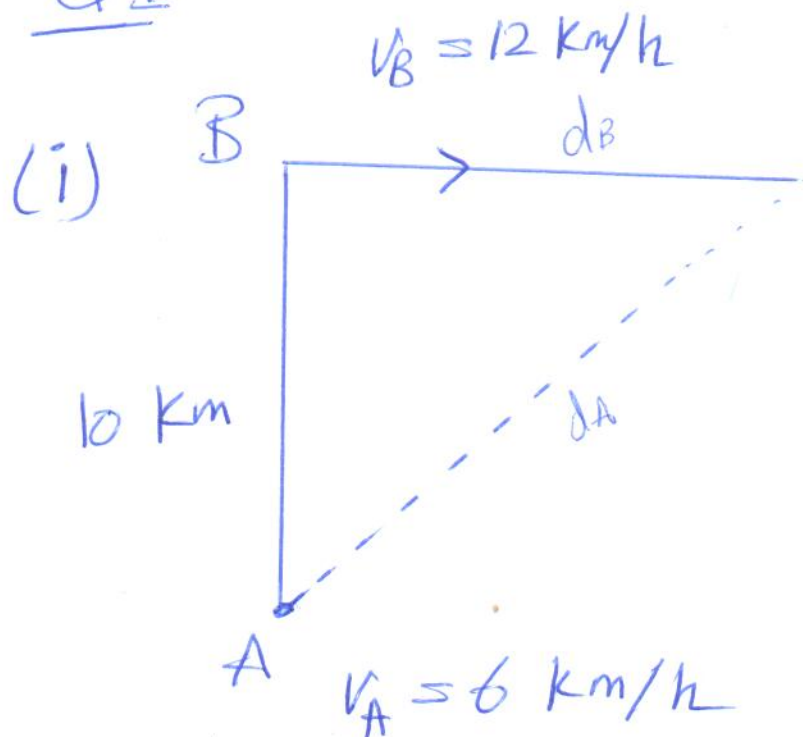


Q1



$$v_B = d_B / t \Rightarrow d_B = t v_B$$

$$v_A = d_A / t \Rightarrow d_A = t v_A$$

In order for two ship to intercept

$$d_A^2 = 10^2 + d_B^2 \Rightarrow 10^2 = d_A^2 - d_B^2$$

$$10^2 = t^2 (v_A^2 - v_B^2) = t^2 (6^2 - 12^2)$$

$$10^2 = -t^2 180 \Rightarrow t^2 < 0$$

which impossible

So, A and B can't intercept.