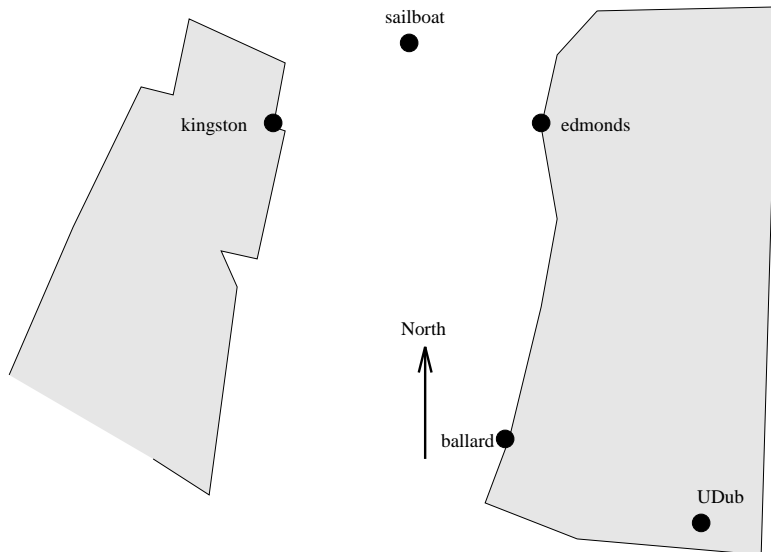


1. Which is faster: 100 miles/hour or 150 feet/second ?

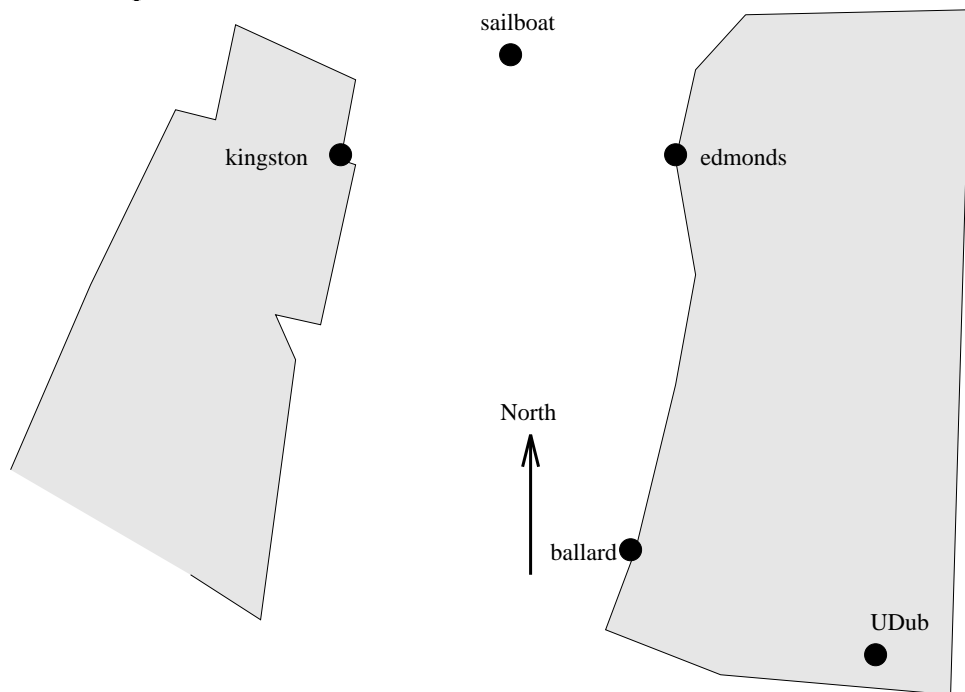
2. Solve this equation for t : $4 = \sqrt{(t-1)^2 + (t+1)^2}$

3. Erik's disabled sailboat is floating at a stationary location 3 miles East and 2 mile North of Kingston. A ferry leaves Kingston heading due East toward Edmonds at 12 mph. At the same time, Erik leaves the sailboat in a dinghy heading due South 10 ft/sec (hoping to intercept the ferry). Edmonds is 6 miles due East of Kingston.



- (a) Compute Erik's speed in mph and Ferry speed in ft/sec.
- (b) Impose a coordinate system with Ballard the origin. Insert into the picture the locations of the ferry and Erik after 7 minutes and their coordinates. Find the distance between Erik and the ferry at this instant.
- (c) Explain why Erik misses the ferry.
- (d) After 10 minutes, a Coast Guard boat leaves Kingston heading due East at a speed of 25 ft/sec. Will the Coast Guard boat catch the ferry before it reaches Edmonds? Explain.

4. The next day, Erik's disabled sailboat is still floating stationary 3 miles East and 2 mile North of Kingston. A Ferry leaves Kingston heading toward Edmonds at 12 mph. After 20 minutes the ferry turns heading due South. Ballard is 8 miles South and 1 mile West of Edmonds. Impose coordinates with Ballard the origin. Edmonds is 6 miles due East of Kingston.



- (a) Find the equations for the lines along which the ferry is moving and draw in these lines.
- (b) Find the coordinates where the ferry turns to head south, mark this location and compute the distance from the ferry to the sailboat at this instant.
- (c) Find the coordinates of the ferry 25 minutes after leaving Kingston, mark this location and compute the distance from the ferry to the sailboat at this instant.