River Crossing

A boat launches from one shore of a river at a heading $24^\circ$ downstream. The river is 0.6 miles wide in most places. If the current moves at 6mph and the boat’s speed, relative to the water, is 17mph,

(a) How far down the opposite shore will the boat arrive?

(b) How far will the boat have traveled getting there?

(c) How fast (relative to the shore) did the boat travel?