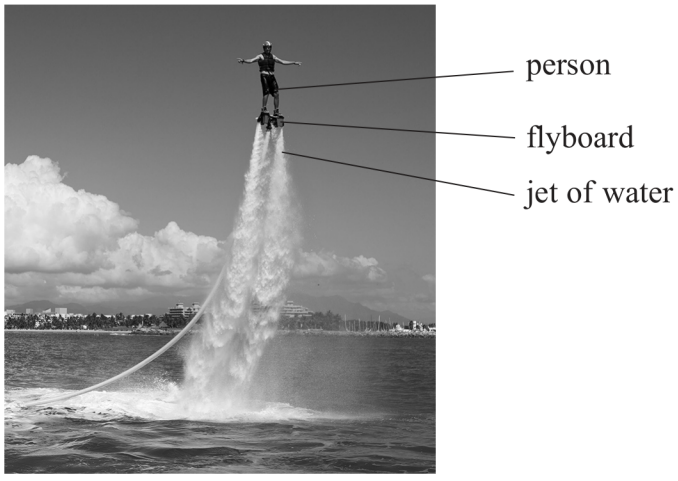
SECTION B

Answer ALL questions. Write your answers in the spaces provided.

11 A flyboard enables a person to hover at a constant height above the sea as shown. Water is constantly pumped up to the flyboard in a thick pipe. A jet of water is then forced downwards, causing an upwards force on the flyboard.



(Source: © Justin Lewis / Getty Images)

Calculate the velocity of the jet of water as it leaves the flyboard. Assume the water has negligible velocity before it leaves the flyboard.

mass of person and flyboard equipment = 175 kg
mass flow rate of water = 114 kg s^{-1}

Velocity of water jet = ...

(Total for Question 11 = 3 marks)