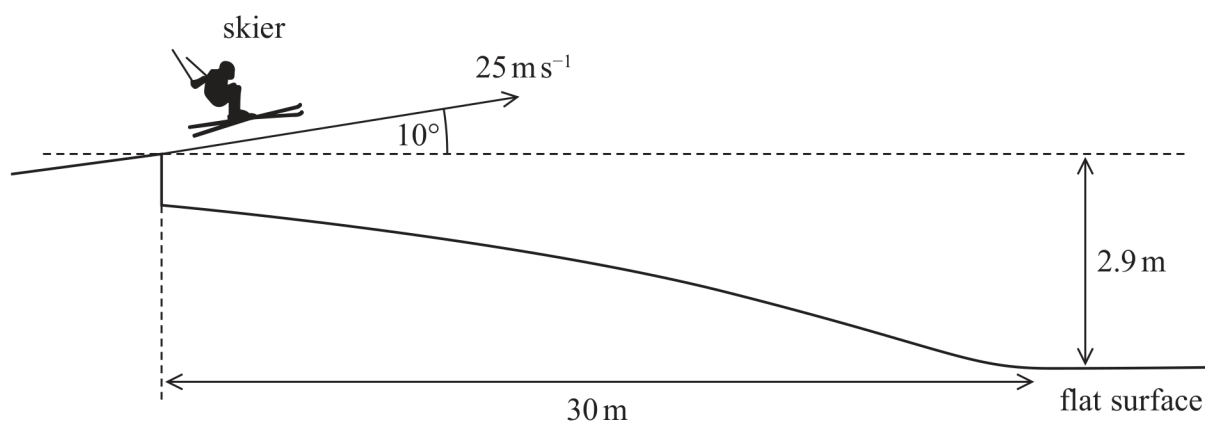


- 14 A skier moving at 25 m s^{-1} skis off a ramp. The ramp is angled upwards at 10° to the horizontal, as shown.

There is a flat surface that starts 30 m from the ramp. The flat surface is 2.9 m below the ramp.



- (a) Deduce whether the skier reaches the flat surface before landing. You may ignore any effects of air resistance.

(5)



- (b) Another skier travels along the horizontal surface with an initial speed of 23 m s^{-1} .
She comes to rest after travelling a distance of 43 m.

Calculate the average force required to bring the skier to rest.

mass of skier = 63 kg

(3)

Average force =

(Total for Question 14 = 8 marks)