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A level Physics B

H557/01 Fundamentals of physics

Question Set 28

1

A ball is projected horizontally twice with different velocities from 44 m above the base of a vertical cliff as shown in **Fig.1**.

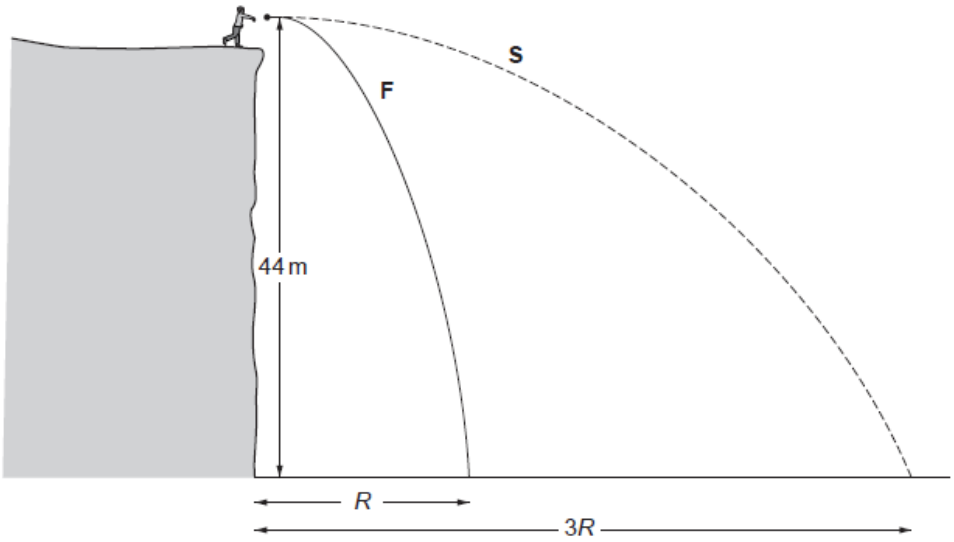

Fig.1

The first throw path **F** has initial horizontal velocity of 8.0 m s^{-1}.

(a) Calculate the horizontal range R for this path. You may ignore the effects of air resistance.

Gravitational acceleration, g = 9.8 m s^{-2}.

R =……..m **[3]**

b) The second path **S** is also from a horizontal projection and achieves a range that is three times larger (3R) than the first path **F**.

State the initial horizontal projection velocity for path **S**. Make your reasoning clear.

initial projection velocity =…….……..…..m s^{-1} **[2]**

Total Marks for Question Set: 5

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