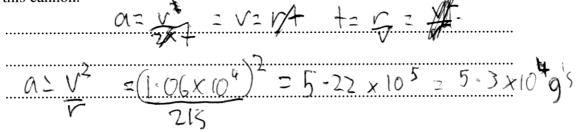


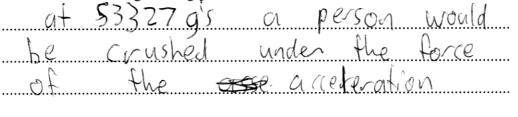
Question 21 (4 marks)

In his science fiction novel *From the Earth to the Moon*, Jules Verne describes how to launch a capsule from a cannon to land on the moon. To reach the moon, the capsule must leave the cannon with a speed of 1.06×10^4 m s⁻¹. The cannon has a length of 215 m, over which the capsule can be assumed to accelerate constantly.

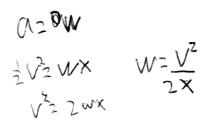
(a) Calculate the magnitude of the acceleration required to achieve this speed using **2** this cannon.



(b) Referring to your answer in part (a), explain why Jules Verne's method is unsuitable for sending a living person to the moon.



.....



Marks

2