Exam Answers
Chapter 2.3 - Energy
Answer 1 2013:1:8

(4 marks)

When a satellite is launched it is placed in an initial circular orbit around the Earth. Later some small jets on board the satellite will fire compressed gas for a set period of time to move it to the precise final circular orbit required. These gas jets point backward relative to the satellite's motion only and **not** toward or away from the Earth.

How can backward facing gas jets be used to raise the satellite to a higher final circular orbit?

Description	Marks
The gas jets increase speed and E_k	1
The E_k is converted to E_p	1
This results in a higher orbit	1
This higher orbit is at a slower speed ($r \propto 1/v^2$)	1
Total	**4**