Now the little prince wants to know how fast this little body is going around.

And well, we can just do f equals ma analysis again, but use a different option here for the description of the circle of motion.

So we are going to get minus Gm m1 over r squared equals minus mv squared over r.

And here one r cancels, and this m cancels.

And that goes to plus.

If we solve this for v, we get v equals Gm1 over r and the square root of that.

And so now the little prince knows how fast this object is going, given the radius here that we've calculated over there with Kepler's laws.