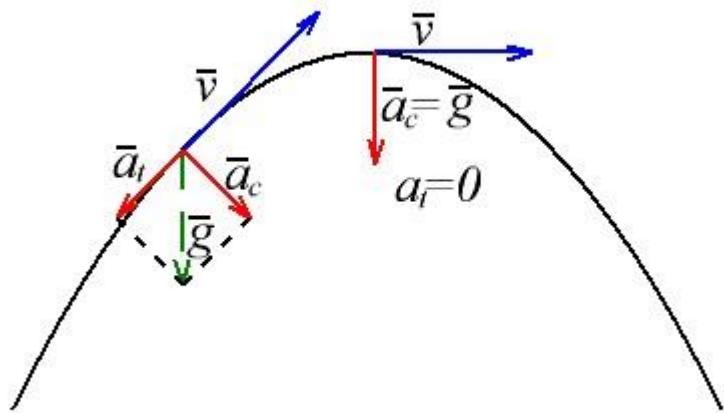


Let's draw the image, that describes body movement in the field of gravity



It's known that

$$a_c = \frac{v^2}{R}$$

Where  $a_c$  – is centripetal acceleration,  $v$  – velocity,  $R$  – curve radius.

So,

$$R = \frac{v^2}{a_c}$$

It's easy to notice, that in the top of the trajectory  $v$  is minimal (according to the energy conservation law),  $a_c$  is maximal (and equal to  $g$ ), so  $R$  is minimum.