

Solomon Practice Paper

Mechanics 3A

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

Question	Points	Score
1	7	
2	7	
3	10	
4	11	
5	13	
6	13	
7	14	
Total:	75	

How I can achieve better:

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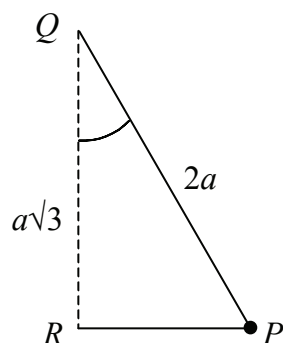


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6. The two ends of a light inextensible string of length $3a$ are attached to fixed points Q and R which are a distance of $a\sqrt{3}$ apart with R vertically below Q . A particle P of mass m is attached to the string at a distance of $2a$ from Q .



P is given a horizontal speed, u , such that it moves in a horizontal circle with both sections of the string taut as shown in Figure.

- (a) Show that $\angle PRQ$ is a right angle. [2]
- (b) Find $\angle PQR$ in degrees. [1]
- (c) Find, in terms of a, g, m and u , the tension in the section of string [7]
- i. PQ ,
 - ii. PR .
- (d) Show that $u^2 \geq \frac{ga}{\sqrt{3}}$. [3]

Total: 13

