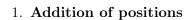
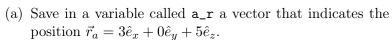
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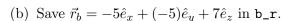
## Position vector

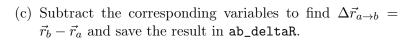
If you are able to solve these problems on your own, then you can assume that you have the minimum knowledge about these topics.

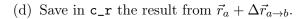
The problems marked with (\*) have additional difficulties. Don't hesitate about seeking help from teachers and your classmates if you are not able to complete them.

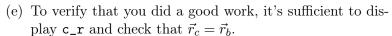


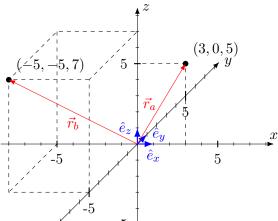












## 2. (\*) Position as a function of a variable

A particle of mass m is attached to a ring of radius R, and therefore its radius measured from the center of the ring is constant. Then it's enough to know the angle  $\varphi$  to describe its position.

