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- can calculate  $g$  (grav. field) anywhere in the vicinity of the source mass  $m$ .

both magnitude & direction

$$g = \frac{GM}{r^2}$$

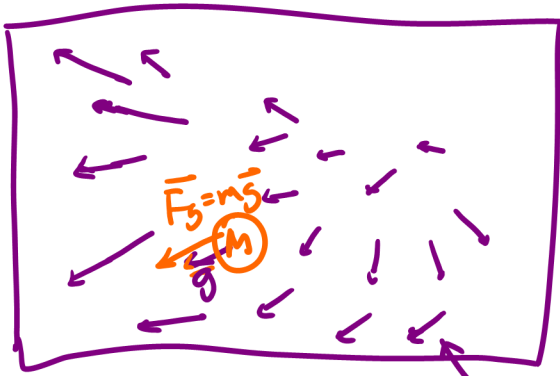
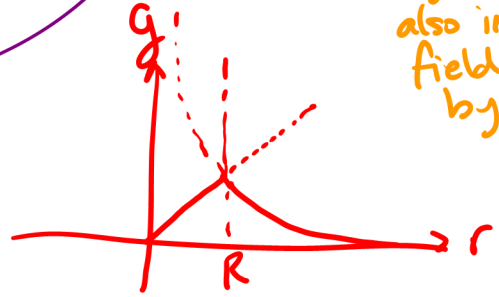
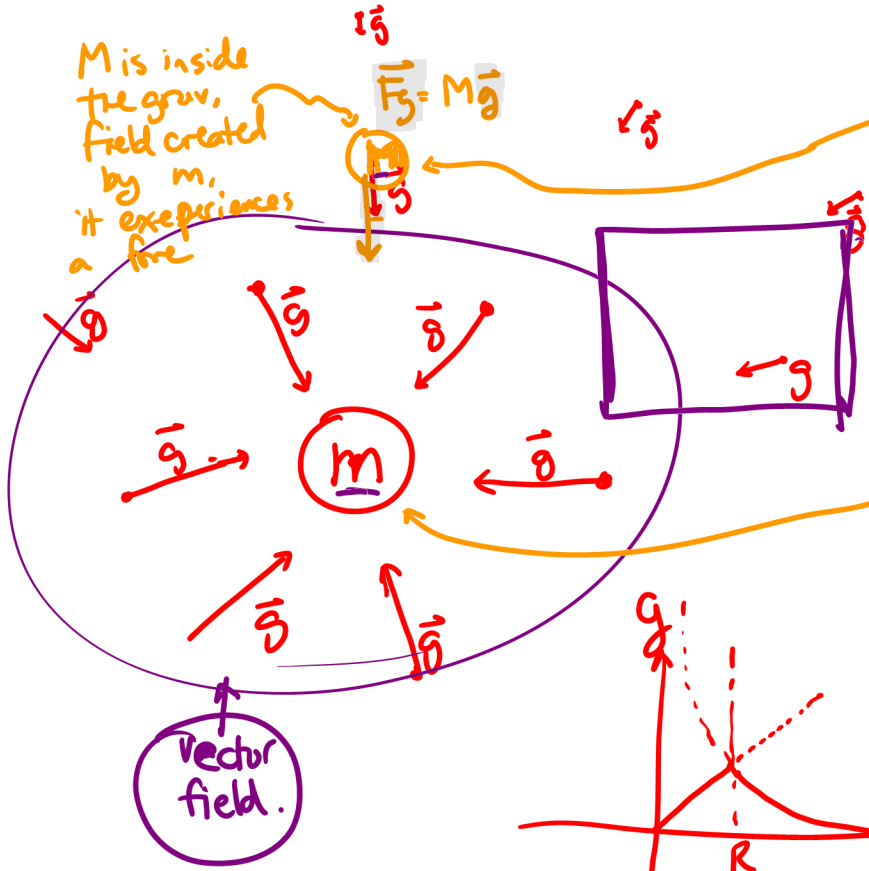
$M$  is inside the grav. field created by  $m$ , it experiences a force

$$\vec{F}_g = M\vec{g}$$

This mass also creates its own gravitational field:

$$g = \frac{GM}{r^2}$$

Just as  $M$  is in the field created by  $m$ ,  $m$  is also in the field created by  $M$ .



grav. field from "something", don't necessarily know what configuration of masses created it