HW2: A Sphere Not Near

P204, Summer 2016

Ia)

If we wish to be explicit

in conveying DIRECTION

(as well as magnitude) in our expression for this force,

then one customary way to do so is:

define $\hat{r}$

as a displacement 'UNIT' displacement vector;

it points from Iamnot toLuna Staten

and has a size of ONE Newton.

Using this convention, our answer is:

$$\boxed{\vec{\mathbf{F}} = -\frac{GMm}{r^2}\hat{r}}$$

If/when we are concerned only about magnitude, then:

$$\boxed{F = \frac{GMm}{r^2}}$$

Ib)

If r is still defined to point from Iamnot to Luna Staten, then:

$$\boxed{\vec{\mathbf{F}} = \frac{GMm}{r^2}\hat{r}}$$

If/when we are concerned only about magnitude, then:

$$\boxed{F = \frac{GMm}{r^2}}$$

Ic)

$$\boxed{\vec{a} = -\frac{GM}{r^2}\hat{r}}$$

or

$$\boxed{a = \frac{GM}{r^2}}$$

IIa)

$$\boxed{\vec{\mathbf{F}} = -\frac{GMm}{r^2}\hat{r}}$$

If/when we are concerned only about magnitude, then:

$$\boxed{F = \frac{GMm}{r^2}}$$

IIb)

If r is still defined to point from Iamnot to Luna Staten, then:

$$\boxed{\vec{\mathbf{F}} = \frac{GMm}{r^2}\hat{r}}$$

If/when we are concerned only about magnitude, then:

$$\boxed{F = \frac{GMm}{r^2}}$$

IIc)

$$\boxed{\vec{a} = -\frac{GM}{r^2}\hat{r}}$$

or

$$\boxed{a = \frac{GM}{r^2}}$$

IIIa)

$$\boxed{F = 0}$$

IIIb)

$$\boxed{F = 0}$$

IIIc)

$$\boxed{a = 0}$$