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Cool! I'am really happy

#Markus Jensen



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#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

Solution DYNAMICS Meriam & Kraige 6th Edition US version / Chapter 1

10 $\vec{v} = \frac{d\vec{r}}{dt} = \frac{d}{dt}(x\vec{i} + y\vec{j} + z\vec{k}) = \dot{x}\vec{i} + \dot{y}\vec{j} + \dot{z}\vec{k}$
a) $\vec{v} = 3600\vec{i} + \frac{d}{dt}(0.0002t^3)\vec{j} = 3600\vec{i} + 0.0006t^2\vec{j}$
b) $\vec{v} = \frac{d}{dt}(0.0002t^3)\vec{j} = 0.0006t^2\vec{j}$
c) $\vec{v} = 3600\vec{i} + 0.0006t^2\vec{j}$
 $\|\vec{v}\| = \sqrt{3600^2 + (0.0006t^2)^2} \approx 3600\sqrt{1 + 2.5 \times 10^{-11}t^4}$

11 For a 100-lb sphere
 $W = mg = 100\text{ lb} = m(32.2\text{ ft/s}^2)$
 $m = \frac{100}{32.2} = 3.106\text{ slugs}$
 $100\text{ lb} = (3.106\text{ slugs})(9.8\text{ m/s}^2)$
 $W = mg = 30.8\text{ N}$

12 $\vec{v}_1 = 10(\frac{3}{5}\vec{i} + \frac{4}{5}\vec{j})$ $\|\vec{v}_1\| = 10$
 $\vec{v}_2 = 10(0.6\vec{i} + 0.8\vec{j})$ $\|\vec{v}_2\| = 10$
 $\vec{v}_1 + \vec{v}_2 = (20\vec{i} + 14\vec{j})$ $\|\vec{v}_1 + \vec{v}_2\| = 24.4$
 $\vec{v}_1 - \vec{v}_2 = (4\vec{i} - 2\vec{j})$ $\|\vec{v}_1 - \vec{v}_2\| = 4.47$
 $\vec{v}_1 \cdot \vec{v}_2 = (10)(10)(\frac{3}{5} \cdot \frac{6}{5} + \frac{4}{5} \cdot \frac{8}{5}) = 116$
 $\cos\theta = \frac{116}{10 \cdot 10} = 1.16$ (impossible)

13 The weight of an average apple is $W = 1\text{ N}$
 $m = \frac{W}{g} = \frac{1}{9.8} = 0.102\text{ kg}$
Mass in kg is $m = \frac{1}{9.8} = 0.102\text{ kg}$
Mass in kg is $m = 0.00220462\text{ slugs}$
 $W = mg = 0.00220462(9.8) = 0.0216\text{ N}$
These apples weigh about 2 N each. That is the rule of 1 N each!

14 Mass of iron sphere, $m = \rho V = (7800\frac{\text{kg}}{\text{m}^3})(\frac{4}{3}\pi(0.050\text{ m})^3) = 3.7\text{ kg}$
Force of each attraction: $\frac{Gm^2}{r^2}$
Weight of each sphere: $\frac{Gm^2}{r^2}$
 $\frac{Gm^2}{r^2} = \frac{Gm^2}{r^2}$ $r = 0.1\sqrt{\frac{Gm^2}{W}}$
 $r = 0.1\sqrt{\frac{(6.67 \times 10^{-11}\text{ N}\cdot\text{m}^2/\text{kg}^2)(3.7\text{ kg})^2}{30.8\text{ N}}}$
 $r = 4.22 \times 10^{-3}\text{ m}$

15 $\vec{F}_A = \frac{Gm_1m_2}{r^2}\vec{e}_{12}$ $r = 0.050\text{ m}$ for all spheres
 $\vec{F}_B = \frac{Gm_1m_2}{r^2}\vec{e}_{13}$
 $\vec{F}_C = \frac{Gm_1m_2}{r^2}\vec{e}_{14}$
 $\vec{F}_D = \frac{Gm_1m_2}{r^2}\vec{e}_{15}$
 $\vec{F}_E = \frac{Gm_1m_2}{r^2}\vec{e}_{16}$
 $\vec{F}_F = \frac{Gm_1m_2}{r^2}\vec{e}_{17}$
 $\vec{F}_G = \frac{Gm_1m_2}{r^2}\vec{e}_{18}$
 $\vec{F}_H = \frac{Gm_1m_2}{r^2}\vec{e}_{19}$
 $\vec{F}_I = \frac{Gm_1m_2}{r^2}\vec{e}_{20}$
 $\vec{F}_J = \frac{Gm_1m_2}{r^2}\vec{e}_{21}$
 $\vec{F}_K = \frac{Gm_1m_2}{r^2}\vec{e}_{22}$
 $\vec{F}_L = \frac{Gm_1m_2}{r^2}\vec{e}_{23}$
 $\vec{F}_M = \frac{Gm_1m_2}{r^2}\vec{e}_{24}$
 $\vec{F}_N = \frac{Gm_1m_2}{r^2}\vec{e}_{25}$
 $\vec{F}_O = \frac{Gm_1m_2}{r^2}\vec{e}_{26}$
 $\vec{F}_P = \frac{Gm_1m_2}{r^2}\vec{e}_{27}$
 $\vec{F}_Q = \frac{Gm_1m_2}{r^2}\vec{e}_{28}$
 $\vec{F}_R = \frac{Gm_1m_2}{r^2}\vec{e}_{29}$
 $\vec{F}_S = \frac{Gm_1m_2}{r^2}\vec{e}_{30}$
 $\vec{F}_T = \frac{Gm_1m_2}{r^2}\vec{e}_{31}$
 $\vec{F}_U = \frac{Gm_1m_2}{r^2}\vec{e}_{32}$
 $\vec{F}_V = \frac{Gm_1m_2}{r^2}\vec{e}_{33}$
 $\vec{F}_W = \frac{Gm_1m_2}{r^2}\vec{e}_{34}$
 $\vec{F}_X = \frac{Gm_1m_2}{r^2}\vec{e}_{35}$
 $\vec{F}_Y = \frac{Gm_1m_2}{r^2}\vec{e}_{36}$
 $\vec{F}_Z = \frac{Gm_1m_2}{r^2}\vec{e}_{37}$
 $\vec{F}_AA = \frac{Gm_1m_2}{r^2}\vec{e}_{38}$
 $\vec{F}_BB = \frac{Gm_1m_2}{r^2}\vec{e}_{39}$
 $\vec{F}_CC = \frac{Gm_1m_2}{r^2}\vec{e}_{40}$
 $\vec{F}_DD = \frac{Gm_1m_2}{r^2}\vec{e}_{41}$
 $\vec{F}_EE = \frac{Gm_1m_2}{r^2}\vec{e}_{42}$
 $\vec{F}_FF = \frac{Gm_1m_2}{r^2}\vec{e}_{43}$
 $\vec{F}_GG = \frac{Gm_1m_2}{r^2}\vec{e}_{44}$
 $\vec{F}_HH = \frac{Gm_1m_2}{r^2}\vec{e}_{45}$
 $\vec{F}_II = \frac{Gm_1m_2}{r^2}\vec{e}_{46}$
 $\vec{F}_JJ = \frac{Gm_1m_2}{r^2}\vec{e}_{47}$
 $\vec{F}_KK = \frac{Gm_1m_2}{r^2}\vec{e}_{48}$
 $\vec{F}_LL = \frac{Gm_1m_2}{r^2}\vec{e}_{49}$
 $\vec{F}_MM = \frac{Gm_1m_2}{r^2}\vec{e}_{50}$
 $\vec{F}_NN = \frac{Gm_1m_2}{r^2}\vec{e}_{51}$
 $\vec{F}_OO = \frac{Gm_1m_2}{r^2}\vec{e}_{52}$
 $\vec{F}_PP = \frac{Gm_1m_2}{r^2}\vec{e}_{53}$
 $\vec{F}_QQ = \frac{Gm_1m_2}{r^2}\vec{e}_{54}$
 $\vec{F}_RR = \frac{Gm_1m_2}{r^2}\vec{e}_{55}$
 $\vec{F}_SS = \frac{Gm_1m_2}{r^2}\vec{e}_{56}$
 $\vec{F}_TT = \frac{Gm_1m_2}{r^2}\vec{e}_{57}$
 $\vec{F}_UU = \frac{Gm_1m_2}{r^2}\vec{e}_{58}$
 $\vec{F}_VV = \frac{Gm_1m_2}{r^2}\vec{e}_{59}$
 $\vec{F}_WW = \frac{Gm_1m_2}{r^2}\vec{e}_{60}$
 $\vec{F}_XX = \frac{Gm_1m_2}{r^2}\vec{e}_{61}$
 $\vec{F}_YY = \frac{Gm_1m_2}{r^2}\vec{e}_{62}$
 $\vec{F}_ZZ = \frac{Gm_1m_2}{r^2}\vec{e}_{63}$
 $\vec{F}_AAA = \frac{Gm_1m_2}{r^2}\vec{e}_{64}$
 $\vec{F}_BBB = \frac{Gm_1m_2}{r^2}\vec{e}_{65}$
 $\vec{F}_CCC = \frac{Gm_1m_2}{r^2}\vec{e}_{66}$
 $\vec{F}_DDD = \frac{Gm_1m_2}{r^2}\vec{e}_{67}$
 $\vec{F}_EEE = \frac{Gm_1m_2}{r^2}\vec{e}_{68}$
 $\vec{F}_FFF = \frac{Gm_1m_2}{r^2}\vec{e}_{69}$
 $\vec{F}_GGG = \frac{Gm_1m_2}{r^2}\vec{e}_{70}$
 $\vec{F}_HHH = \frac{Gm_1m_2}{r^2}\vec{e}_{71}$
 $\vec{F}_III = \frac{Gm_1m_2}{r^2}\vec{e}_{72}$
 $\vec{F}_JJJ = \frac{Gm_1m_2}{r^2}\vec{e}_{73}$
 $\vec{F}_KKK = \frac{Gm_1m_2}{r^2}\vec{e}_{74}$
 $\vec{F}_LLL = \frac{Gm_1m_2}{r^2}\vec{e}_{75}$
 $\vec{F}_MMM = \frac{Gm_1m_2}{r^2}\vec{e}_{76}$
 $\vec{F}_NNN = \frac{Gm_1m_2}{r^2}\vec{e}_{77}$
 $\vec{F}_OOO = \frac{Gm_1m_2}{r^2}\vec{e}_{78}$
 $\vec{F}_PPP = \frac{Gm_1m_2}{r^2}\vec{e}_{79}$
 $\vec{F}_QQQ = \frac{Gm_1m_2}{r^2}\vec{e}_{80}$
 $\vec{F}_RRR = \frac{Gm_1m_2}{r^2}\vec{e}_{81}$
 $\vec{F}_SSS = \frac{Gm_1m_2}{r^2}\vec{e}_{82}$
 $\vec{F}_TTT = \frac{Gm_1m_2}{r^2}\vec{e}_{83}$
 $\vec{F}_UUU = \frac{Gm_1m_2}{r^2}\vec{e}_{84}$
 $\vec{F}_VVV = \frac{Gm_1m_2}{r^2}\vec{e}_{85}$
 $\vec{F}_WWW = \frac{Gm_1m_2}{r^2}\vec{e}_{86}$
 $\vec{F}_XXX = \frac{Gm_1m_2}{r^2}\vec{e}_{87}$
 $\vec{F}_YYY = \frac{Gm_1m_2}{r^2}\vec{e}_{88}$
 $\vec{F}_ZZZ = \frac{Gm_1m_2}{r^2}\vec{e}_{89}$
 $\vec{F}_AAA = \frac{Gm_1m_2}{r^2}\vec{e}_{90}$
 $\vec{F}_BBB = \frac{Gm_1m_2}{r^2}\vec{e}_{91}$
 $\vec{F}_CCC = \frac{Gm_1m_2}{r^2}\vec{e}_{92}$
 $\vec{F}_DDD = \frac{Gm_1m_2}{r^2}\vec{e}_{93}$
 $\vec{F}_EEE = \frac{Gm_1m_2}{r^2}\vec{e}_{94}$
 $\vec{F}_FFF = \frac{Gm_1m_2}{r^2}\vec{e}_{95}$
 $\vec{F}_GGG = \frac{Gm_1m_2}{r^2}\vec{e}_{96}$
 $\vec{F}_HHH = \frac{Gm_1m_2}{r^2}\vec{e}_{97}$
 $\vec{F}_III = \frac{Gm_1m_2}{r^2}\vec{e}_{98}$
 $\vec{F}_JJJ = \frac{Gm_1m_2}{r^2}\vec{e}_{99}$
 $\vec{F}_KKK = \frac{Gm_1m_2}{r^2}\vec{e}_{100}$

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