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| **1.**  **HyperPhysics N Laws**  There are three laws of motion that are commonly referred to as Newton’s Laws of motion. One of the laws can be describing a special case of one of the other laws. Which are true?  A) Newton’s 2nd law is a special case of Newton’s 1st law, when the motion is constant. B) Newton’s 3rd law is a special case of Newton’s 1st law, two bodies are moving relative to each other. C) Newton’s 1st law is a special case of Newton’s 2nd law, when a body is in constant accelerated motion. D) Newton’s 1st law is a special case of Newton’s 2nd law, when the net external force is zero.  E) Newton’s 3rd law is a special case of Newton’s 2nd law, when two interacting bodies push equally on each other.  **Correct answer(s):** D  **2.**  **HyperPhys Four Fundamental Forces**  The current understanding of forces in nature accounts for all interactions in the universe in terms of one of four fundamental forces. Which statement(s) are true?  A) Friction is a fundamental force that opposes motion.  B) Torques are fundamental forces that cause rotational motion. C) Gravitational forces are fundamental forces that pull masses together.   D) Electromagnetic forces are fundamental forces between charged or magnetic matter. E)  Elastic forces are fundamental forces that cause matter to return to its original configuration. F) Nuclear weak and strong forces are fundamental forces between parts of matter inside the nucleus of at atoms. G) The ranking order of the relative strength of the four fundamental forces, from **weakest to STRONGEST** is: Gravitational << Electromagnetic < Nuclear Weak < Nuclear Strong. H) All fundamental forces follow the “inverse square law” meaning they can be described as F≈1/R^2.(Use the HyperPhysics Index =a hot link on the left of the HyperPhysics pages to look up ““inverse square law”.)  **Correct answer(s):** C, D, F  **3.**  **HyperPhys Units & Vector Ops**  Using the Physical Units and Vector Operations pathways in the HyperPhysics Concept Map, match the correct association with the statement (defining statement).   |  | | --- | | A. Mass x acceleration | | B. The Polar form of the vector F = (7 Newtons, 45o) | | C. Work divided by time | | D. Slugs are units of | | E.    This image represents a process : http://angel.southseattle.edu/AngelUploads/QuestionData/797a/797a8055-0bb5-4eb8-80f0-3c5587b6f1d9/vec3a.gif#%7B23F8ECEF-4FFB-4FE3-AFD7-8BEDBB104683%7D    This image represents the process of:...?  (select the most appropriate choice for a title of this graphic) |   Magnitude, direction  Component form of vector addition  mass  ML/T2 units  Average Power = <P>  **Correct answer(s):** The Polar form of the vector F = (7 Newtons, 45o):Magnitude, direction,    This image represents a process : http://angel.southseattle.edu/AngelUploads/QuestionData/797a/797a8055-0bb5-4eb8-80f0-3c5587b6f1d9/vec3a.gif#%7B23F8ECEF-4FFB-4FE3-AFD7-8BEDBB104683%7D    This image represents the process of:...?  (select the most appropriate choice for a title of this graphic)  :Component form of vector addition, Slugs are units of:mass, Mass x acceleration:ML/T2 units, Work divided by time:Average Power = <P> |