

sci.physics: Re: How far does an object fall during the first half second after it's released?

Re: How far does an object fall during the first half second after it's released?

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From: Gene Nygaard (gnygaard_at_nccray.com)

Date: 07/04/04

Date: Sun, 04 Jul 2004 10:18:15 -0500

On Sat, 3 Jul 2004 12:23:40 -0700, "Richard Henry" <rphenry@home.com> wrote:

>
> "Gene Nygaard" <gnygaard@nccray.com> wrote in message
> news:glbde0lmfdnu3o0g0mmmh6hhjje6od8o2h@4ax.com...
>> On Sat, 3 Jul 2004 05:55:52 -0700, "Richard Henry" <rphenry@home.com>
>> wrote:
>>
>> >
>> > "Gene Nygaard" <gnygaard@nccray.com> wrote in message
>> > news:d7vce0dhbjt45oopeo0b689n1chb13ptfd@4ax.com...
>> >> On Fri, 2 Jul 2004 15:32:00 -0700, "Richard Henry" <rphenry@home.com>
>> >> wrote:
>> >>
>> >> >
>> >> > "Gene Nygaard" <gnygaard@nccray.com> wrote in message
>> >> > news:g39be01bfq6v1nli0bf1d0a85718t4fc1r@4ax.com...
>> >> >> On Fri, 02 Jul 2004 13:02:21 GMT, Sam Wormley <swormley1@mchsi.com>
>> >> >> wrote:
>> >> >>
>> >> >> > "Donald G. Shead" wrote:
>> >> >> >>
>> >> >> >> "Richard Henry" <rphenry@home.com> wrote in message
>> >> > news:<[HTZEc.6180\\$151.4316@fed1read02](mailto:HTZEc.6180$151.4316@fed1read02)>...
>> >> >> >> > "Donald G. Shead" <dcshead@charter.net> wrote
>> >> >> >> Cut<
>> >> >> >> >
>> >> >> >> > Virtually all good weight-scales, _if set to zero when
> empty_;
>> > in
>> >> > the
>> >> >> >> > controled environment of a laboratory: Whether at the equator
> or
>> >> > the
>> >> >> >> > poles will register the same weight for any item!

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>>>>>>>
>>>>>>> > *No they don't.*
>>>>>>>
>>>>>>> *Will you please tell me why they don't.*
>>>>>>>
>>>>>>> > $w = mg$
>>>>>>>
>>>>>>> > *g has different values at different altitudes and different*
>>>>>>> > *locations*
>>>>>>> > *on the Earth at the same altitude. This is a problem for spring*
>>>>>>> > *scales.*
>>>>>>>
>>>>>>> *Big deal. You are adding additional specifications, narrowly*
>>>>>>> *restricting the type of scales you are talking about.*
>>>>>>>
>>>>>>> *So "No, they don't" should not be changed to "Yes, they do" but*
>>>>>>> *rather*
>>>>>>> *to "Sometimes they do, and sometimes they don't."*
>>>>>>>
>>>>>>> > *Really? With which of these statements do you disagree:*
>>>>>>>
>>>>>>> > *1. The original statement described "weight-scales".*
>>>>>>>
>>>>>>> > *2. Weight = mass times g, the local gravitational acceleration.*
>>>>>>>
>>>>>>> > *3. g varies over the surface of the Earth, especially at "the equator*
>>>>>>> *or*
>>>>>>> > *the poles", as in the original statement.*
>>>>>>>
>>>>>>> > *4. Weight varies over the surface of the Earth, especially at "the*
>>>>>>> *equator*
>>>>>>> > *or the poles", as in the original statement.*
>>>>>>>
>>>>>>> > *2 and 4, of course.*
>>>>>>> > *Ah. The New Physics. What is the p[roper relationship of weight and*
>>>>>>> *mass,*
>>>>>>> > *then, when the speaker is making references to variations (or lack*
>>>>>>> *thereof)*
>>>>>>> > *over the surface of the earth?*
>>>>>>>
>>>>>>> *Depends on which meaning of each of those ambiguous words is intended.*
>>>>>>>
>>>>>>> > *1. The atomic weight of helium does not vary over the surface of the*
>>>>>>> *earth. Similarly for molecular weight or formula weight.*
>>>>>>>
>>>>>>> > *2. The troy weight of a bar of platinum does not vary oer the surface*
>>>>>>> *of the earth.*
>>>>>>>
>>>>>>> > *3. The carat weight of a diamond doesn't vary over the surface of the*
>>>>>>> *earth.*
>>>>>>>

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>> 4. *The net weight of a box of cereal does not vary over the surface of the earth, not does the tare weight of the packaging.*

>>

>> 5. *My body weight does not vary over the surface of the earth, if I am using the definition of weight normal for medicine or sports, the reasons we usually weigh ourselves. Just because some fools writing physics textbooks or designing science museum exhibits use a nonstandard meaning of the word "weight" in this context doesn't change the fact that the kilograms used throughout the world (including many hospitals in the U.S.A.) for this weight are the proper SI unit for the purpose.*

>>

>> *So, what the hell do you think that the "proper relationship between weight and mass" is in cases 1 through 5 above? Since I'm "making reference to variations over the surface of the earth" and since the weight in these instances does not vary, does that mean that you'd think that there is some other quantity called "mass" which does vary in these cases?*

>>

>> *>To complicate matters, I bought a yard chain for the new dog yesterday. >Printed on the package was the statement "Breaking strength over 515 >kilograms".*

>>

>> *That's not really a complication to this particular discussion--that quantity is not called "weight" in anybody's book. (Fishing line is a different story, however.)*

>>

>> *But what about my ketchup bottle: "Net wt. 24 oz (1 lb 8 oz) 680 g"? What are those grams? What are those pounds and ounces?*

>>

>> *Don't you pay any attention whatsoever to the world around you? Why do you put your blinders on when you run across examples like this, or my examples above?*

>>

>> *Certainly we do still see many vestiges of the use of the once-legitimate kilograms force. But when kilograms are used for something that is called "weight," the overwhelming majority of the time these are the units legitimate in the modern metric system, the International System of Units. They are units of mass. They are not kilograms force.*

>

>*You have given many fine examples and a logical arguemnt. Unfortunately, it >has very little to do with Mr. Shead's original statement.*

It doesn't cost you any more to pay attention. In fact, it is directly on point to Shead's original statement.

Gene Nygaard