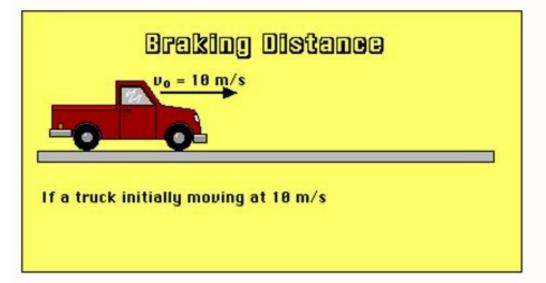
How to calculate speed with kinetic energy

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How to calculate speed using kinetic energy. How to calculate speed with weight and kinetic energy. How to find speed kinetic energy.

This kinetic energy calculator is a tool which helps you assess the energy of motion. It is based on the kinetic energy formula, which applies to every object in vertical or horizontal motion. The following article will explain: What is kinetic energy formula is used The definition of kinetic energy What are some common kinetic energy units What is the difference between potential and kinetic energy How the work-energy that it possesses due to its motion. It is defined as the work needed to accelerate a body of a given mass from rest to its stated velocity. Having gained this energy unless its speed changes. The same amount of work is done by the body in decelerating from its current speed to a state of rest. Kinetic energy is the energy of an object in motion. It provides information about how the mass of an object influences its velocity. Let's take an example of kinetic energy is the human punch force, where the energy accumulates in the body and transfers through the punch. You can easily find it out by using our kinetic energy calculator. The kinetic energy formula defines the relationship between the mass of an object and its velocity. The kinetic energy formula defines the relationship between the mass of an object and its velocity. The kinetic energy formula defines the relationship between the mass of an object and its velocity. The kinetic energy formula defines the relationship between the mass of an object and its velocity. The kinetic energy formula defines the relationship between the mass of an object and its velocity. needed to move an object. The same energy could be used to decelerate the object, but keep in mind that velocity is squared. This means that even a small increase in speed changes the kinetic energy by a relatively high amount. How about you give our kinetic energy calculator a try? This tool do any and every calculation for you after typing the mass and velocity of an object. It even works in reverse, just input any two known variables and you will receive the third! If you don't know the speed of the object, you can easily calculate it with our velocity calculator. You should be aware, however, that this formula doesn't take into account relativistic effects, which become noticeable at higher speeds. If an object is moving faster than 1% of the speed of light (approximately 3,000 km/s, or 3,000,000 m/s), you should use our relativistic kinetic energy are precisely the same as for any other type of energy. The most popular and commonly used kinetic energy units are: Joule (J), equivalent to kg * m² / s² -SI unit, Foot-pound (ft·lb) - imperial unit, Electronvolt (eV), Calorie (cal), Watt-hour (Wh). All of these kinetic energy units can be easily converted into one another with the following ratios: 1 J = 0.7376 ft·lb = 6.242·10¹⁸ eV = 0.239 cal = 2.778·10⁻⁴ Wh. If you have problems with doing ratios, check out our detailed article on how to find a ratio or its missing terms! As you can see, depending on the scale, they may differ by a significant number of orders of magnitude, so it's convenient to use scientific notation or express them with some prefix like kilo- (kcal, kWh), Mega- (MeV), etc. Anyway, you don't need to worry about the units while using our kinetic energy calculator; you can choose whichever you like by clicking on the units, and the value will be immediately converted. Potential energy refers to the gravitational pull exerted on an object, relative to how far it has to fall. When the object gains altitude, its potential energy increases. If you want to check what potential energy is and how to calculate it, use our potential energy calculator. It turns out that kinetic energy and the amount of work done in the system are strictly correlated, and their relation can be described by the work-energy theorem. It states that the work done by all external forces is converted into a change of kinetic energy: W = AKE = KE₂ - KE₁. Actually, there are several types of kinetic energies. We can distinguish: Translational kinetic energy - the most well-known type. It's related to the motion of an object traveling in a particular direction and the distance it covers in a given time. This is the kind of energy which you can estimate with this kinetic energy calculator. Rotational kinetic energy - as the name suggests, it takes into account the motion of a body around an axis. Vibrational kinetic energy - can be visualized as when a particle moves back and forth around some equilibrium point, approximated by harmonic motion. Depending on the structure it can be shown as stretching, twisting, or bending. At the microscopic scale, all of these kinetic energy examples are manifestations of thermal energy, which increases as the temperature rises. The expression of the dynamic pressure (caused by fluid flowing) is the following: $p = \rho * v^2 / 2$. It looks very similar to the kinetic energy equation because mass is replaced by the density, and it isn't a coincidence. The other name for dynamic pressure is kinetic energy per unit volume, and analogically, density is defined as the mass contained in a particular volume. With just a pinch of imagination, you can use our kinetic energy calculator to estimate the dynamic pressure in Pa. You're sitting in class and your teacher tells you that the kinetic energy of an object equals 1 J. What do you think - is that a lot, or not really? The key information is what kind of object we are talking about. Let's take a look at some computational kinetic energy examples to get to grips with the various orders of magnitude: Some of the highest energy particles produced by physicists (e.g., protons in Large Hadron Collider, LHC) reach the kinetic energy of few TeV. It is said to be comparable with the kinetic energy of a mosquito. It's impressive when you realize what an enormous number of molecules is there in one insect. However, if we work out the value in joules, then the outcome is in the order of 1 µI. Based on that, an individual particle with the kinetic energy of 1 J is extraordinarily high-energy and surely not going to be produced by humanity any time soon. Let's consider a bullet of mass 5 g, traveling at a speed of 1 km/s. Its kinetic energy equals 2,500 J, way above 1 J because of the considerable velocity. That's the reason why bullets cause a lot of damage while hitting targets. Use the kinetic energy calculator to find out how fast that the same bullet will have to be traveling at to get its energy to 1 J. It's a velocity of about 20 m/s. Well, it will still hurt when it impacts a body, but it definitely won't cause anything worse than a bruise. The ship weighs 50,000 tons and can move at the speed of 10 knots. We can always use speed converter to find that it's around 5.1 m/s. Its kinetic energy can be defined as the energy possessed by an object or a body while in motion. Kinetic energy depends on two properties: mass and the velocity of the object. The formula to calculate the kinetic energy of the object. An average cricket ball weighs 165 g. Therefore, the kinetic energy of the object. The product is the kinetic energy of the object. An average cricket ball weighs 165 g. Therefore, the kinetic energy of the cricket ball is KE = 0.5 * m * v2 = 133.5 J. A 450 g or ~1 lb football traveling towards the field goal at about 38.4 m/s or 126 ft/s has a kinetic energy of 331.7 J. 1 Assess what information you are given. Use this method if you know: the total distance covered by one person or vehicle; and the total time it took that person or vehicle to cover the distance. For example:[1] If Ben traveled 150 miles in 3 hours, what was his average speed, d{\displaystyle S} equals the total distance, and t{\displaystyle t} equals the total time.[2] Advertisement 3 Plug the distance into the formula. Remember to substitute for the variable d{\displaystyle d}. For example, if Ben drives for 3 hours, your formula will look like this: S=150t{\displaystyle d}. For example, if Ben drives for 3 hours, your formula will look like this: S=150t{\displaystyle d}. formula will look like this: S=1503{\displaystyle S={\frac {150}{3}}}. 5 Divide the distance by the time. This will give you the average speed per unit of time, usually hour. For example: S=1503{\displaystyle S={\frac {150}{3}}}. 5 Divide the distance by the time. This will give you the average speed is 50 miles per hour. Advertisement 1 Assess what information you are given. Use this method if you know; multiple distances that were traveled; and the amount of time it took to travel each of those distances. [3] For example; If Ben traveled 150 miles in 2 hours, and 70 miles in 1 hour, what was his average speed for the entire trip? 2 Set up the formula for average speed. The formula is S=dt{\displaystyle S} equals the total distance, and t{\displaystyle d} equals the total distance, and t{\displaystyle d} equals the total distance, and tale for the formula is S=dt{\displaystyle d} equals the total distance, and tale for the formula is S=dt{\displaystyle d} equals the total displaystyle d}. d{\displaystyle d} in the formula. For example, If Ben traveled 150 miles, and 70 miles, vou would determine the total speed by adding the three distances together: 150+120+70=340{\displaystyle S={\frac {340}{t}}}. So, your formula will look like this: S=340t{\displaystyle S={\frac {340}{t}}}. 4 Determine the total time. To do this, add up the times, usually hours, that were spent traveling. Substitute this value for t{\displaystyle 1} in the formula will look like this: S=3406{\displaystyle 3+2+1=6}. So, your formula will look like this: S=3406{\displaystyle S={\frac {340}}} {6}}}. 5 Divide the total distance traveled by the total time spent traveling. This will give you your average speed was about 57 mph. Advertisement 1 Assess what information you are given. Use this method if you know: multiple speeds used to traveled 50 mph for 2 hours, and 70 mph for 1 hour, what was his average speed for the entire trip? 2 Set up the formula for average speed. The formula is S=dt{\displaystyle S} equals the total distance, and t{\displaystyle d} equals the total distance, and t{\displaystyle d} equals the total distance, and t{\displaystyle d} equals the total distance traveled for each section of the trip. Add up these distances. Substitute this sum for d{\displaystyle 50\times 3=150{\text{miles}}} 60 mph for 2 hours $= 60 \times 2=120$ miles{\displaystyle 50\times 2=120{\text{miles}}} 70 mph for 1 hour $= 70 \times 1=70$ miles{\displaystyle 70\times 3=150{\text{miles}}} 1=70{\text{miles}}}\$o, the total distance is 150+120+70=340miles.{\displaystyle 150+120+70=340(\text{miles}}}.} So, your formula will look like this: S=340t{\displaystyle 150+120+70=340(\text{miles}}}.} Your formula will look like this: S=340t{\displaystyle 150+120+70=340(\text{miles}}}.} formula. For example, If Ben for 3 hours, 2 hours, and 1 hour, you would determine the total time by adding the three times together: 3+2+1=6{\displaystyle 3+2+1=6}. So, your formula will look like this: S=3406{\displaystyle 3+2+1=6}. So, your formula will give you your average speed. For example: S=3406{\displaystyle S=56.67}. So if Ben traveled 50 mph for 3 hours, 60 mph for 3 hours, 60 mph for 3 hours, and 70 mph for 3 hours, 60 mph for 3 speeds were traveled for the same amount of time. For example, if Ben drives 40 mph for a hours, what is his average speed for the entire trip? 2 Set up the formula is s=a+b2{\displaystyle s={\frac {a+b}{2}}}, where s{\displaystyle s=a+b2}. s} equals the average speed, a{\displaystyle a} equals the speed for the first half of the time, and b{\displaystyle b} equals the speed for the first half of the time. [7] In these types of problems, It doesn't matter for how long each speed is driven, as long as each speed is used for half the total duration of time. You can modify the formula if you are given three or more speeds for the same amount of time. For example, $s=a+b+c+d\{displaystyle\ s=\{frac\ \{a+b+c+d\}\{4\}\}\}$. As long as the speeds into the formula. It doesn't matter which speed you substitute for a{\displaystyle a} and which you substitute for b{\displaystyle b}. For example, if the first speed is 40 mph, and the second speed for the entire trip. For example:s=40+602{\displaystyle s={\frac {40+60}{2}}}s=1002{\displaystyle s=50}So, if Ben traveled 40 mph for 2 hours, then 60 mph for another 2 hours, the 60 mph for another 2 those speeds were used for the same distance. For example, if Ben drives the 160 miles to the waterpark at 40 mph, and returns the 160 miles to t {a+b}}}, where s{\displaystyle s} equals the average speed, a{\displaystyle a} equals the speed for the distance, and b{\displaystyle b} equals the speed for the distance, and balf of the distance, and balf of the distance, and balf of the distance. speed is driven, as long as each speed is used for half the total distance. You can modify the formula if given three speeds for the same distance. For example, s=3abcab+bc+ca{\displaystyle a} and which you (60)40+60{\displaystyle s={\frac {4800}{40+60}}}s=480040+60{\displaystyle s={\frac {4800}{40+60}}}s=4800100{\displaystyle s={\frac {4800}{100}}}}. 5 Add the two speeds together. This number should be the denominator of your fraction. This will give you the average speed for the entire trip. For example:s=4800100{\displaystyle s=48}. So, if Ben drives 40 mph for the 160 miles home, his average speed for the trip is 48 mph. Advertisement Add New Question An athlete runs in a circular path with a radius of 14m. The athlete completes 10 rounds in 10 minutes. How do I calculate the circumference of the circumference is 2(pi)(r). So 2(3.14)(14) = 87.92. Since he runs, you have to multiply the circumference by 10: 87.92 x 10 = 879.2 (879 rounded) Next, it says he completed the run in 10 minutes, but the answer needs to be in seconds, so convert by multiplying $10 \times 60 = 600$. Now, you can set up the speed was 1.47 m/s Question How can I find an average speed of a car if it moves from point A To B at a speed of 30 kilometers per hour? Since you have two different speeds for half the distance (A to B = half), use the formula given in method 5: 2ab/a+b. So: (2)(30)(50)/30+50 3000/80 37.5 So, the average speed is 37.5 km/hr Question Does steepness matter when you're finding the average speed? No, the formula for average speed? No, the formula for average speed is the same regardless of steepness. If you were calculating velocity, then the direction/incline of the motion would matter. See more answers Ask a Question Advertisement This article was co-authored by wikiHow Staff. Our trained team of editors and researchers validate articles for accuracy and comprehensiveness. wikiHow's Content Management Team carefully monitors the work from our editorial staff to ensure that each article is backed by trusted research and meets our high quality standards. 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