

What's Up (and Down) With KE and PE?

Question Group 1

Question 1

Read the description of the motion of the bold-faced object and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increases, decreases, or remains constant.

A **ball** is falling from the second floor balcony to the floor below.

Question 2

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

An **acorn** drops out of a tree and falls to the ground below.

Question 3

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

A **box of shingles** is dropped from the roof and falls to the ground below.

Question Group 2

Question 4

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

A **car** skids to a stop along a level roadway.

Question 5

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

A **baseball player** slides to a stop after diving head-first into third base.

Question 6

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

A **shuffleboard disk** slides to a stop while moving across the level shuffleboard court.

Question Group 3

Question 7

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

As soon as the starting gun sounded out, a **sprinter** rapidly accelerated from rest to her top speed.

Question 8

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

As soon as the light turned green, the driver stepped on the gas and the **car** accelerated down the level highway.

Question 9

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Once cleared for takeoff, the **jet** began to accelerate from rest to high speed along the level runway.

Question Group 4

Question 10

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **elevator** moved from the ground floor to the 10th floor at a constant speed.

Question 11

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **mechanic** hoisted the car upward at a constant speed.

Question 12

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **bucket of water** was pulled upward out of the well at a constant speed.

Question Group 5

Question 13

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **bowling ball** rolled along the gym floor at a constant speed.

Question 14

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **car** moved along the level street at a constant speed.

Question 15

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **cross-country skier** moved along the level path at a constant speed.

Question Group 6

Question 16

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **skydiver** fell the final 1000 feet at a constant speed.

Question 17

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **hot air balloon** slowly descended at a constant speed until it finally landed on the ground.

Question 18

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **elevator** moved from the 15th floor to the 10th floor at a constant speed.

Question Group 7

Question 19

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Upon leaving the bat, the **baseball** traveled upward towards its highest location.

Question 20

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Upon leaving her club, the **golf ball** moved upward to a height above the surrounding trees.

Question 21

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

In the three seconds after leaving the bat, the **softball** moved upward towards its highest location.

Question Group 8**Question 22**

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The passengers screamed as the **pendulum ride** fell from its highest location to its lowest location.

Question 23

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Anna Litical released the **pendulum bob** from rest at a height of 50 cm above the table and watched it move to the lowest position on its arc.

Question 24

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

After Dad released the swing from its highest position, he watched his **child** swing to the lowest position along the arc.

Question Group 9**Question 25**

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The driver stepped on the gas and the **car** gained speed as it moved up the hill.

Question 26

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

It took a lot of effort, but **Celia** gained speed as she ran up the last hill of the cross-country race.

Question 27

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Using everything he had, **Jeremy** climbed the wall with an increasing speed.

Question Group 10

Question 28

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The passengers screamed as the **roller coaster train** rolled down the first drop from a nearly stationary position at the top.

Question 29

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **skier** jumped out of the starting blocks and skied down the hill towards the ski jump.

Question 30

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

Little Nellie bravely slid down the sledding hill from a resting position at the top.

Question Group 11

Question 31

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

When the driver reached the crest of the hill, she saw the stop light turn red and slammed on the brakes. The **car** slowed down as it moved to the bottom of the hill.

Question 32

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

During the last 40 meters down the hill, the **skier** turned her skis sideways in order to slow down as she approached the bottom of the hill.

Question 33

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The **golf ball** gradually slowed down as it moved down the inclined putting green towards the hole.

Question Group 12

Question 34

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

The high-speed **truck** veered off the road onto the run-away ramp and safely slowed down as it moved up the ramp.

Question 35

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

When the batter hit the foul ball, the **baseball** moved upward to a delighted fan in the top deck.

Question 36

Read the description of the motion and decide if the kinetic energy (KE) and the gravitational potential energy (PE) is increasing, decreasing, or remaining constant.

After takeoff, the **toy rocket** climbed to a height of 25 meters above the ground.