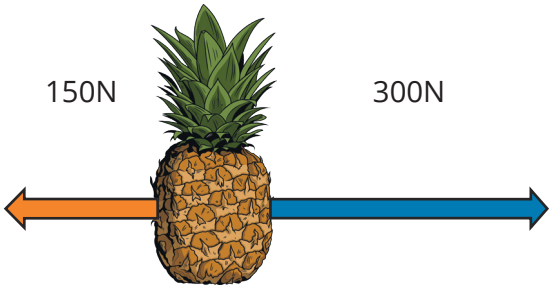
Resistive Forces **Practice Questions**

1. The diagrams below show the forces acting on a stationary object

   Circle the correct description to show what will happen to the object.

   a)

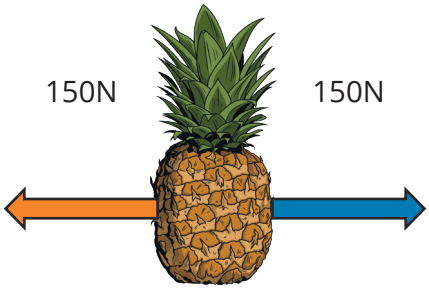


move left

stay still

move right

   b)

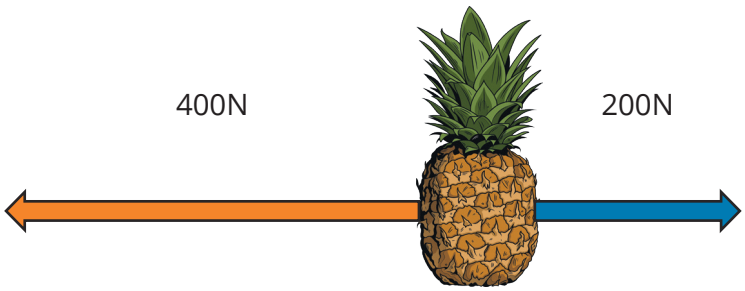


move left

stay still

move right

   c)

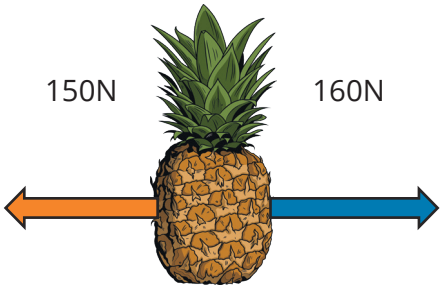


move left

stay still

move right

   d)



move left

stay still

move right

2. A box is pulled along a wooden floor with a force of 300N. An initial resistive force acts in the opposite direction to the box with a magnitude of 135N.

   a) What is the name of the equipment used to measure the pulling force?

   Circle **one** answer.

   ammeter newton meter pedometer

   b) What is the name of the resistive force?

   Circle **one** answer.

   friction air resistance weight water resistance

c) Draw a force diagram to show these two forces acting on the block. Label the arrows with the size of the force.

d) What is the effect of the forces on the motion of the box?

Circle **one** answer in the box below to complete the sentence.

The box will

speed up
move at a constant speed
slow down

.

The box is then pulled with the same force of 300N but this time on a carpet.

e) How will the resistive force on carpet be different to the resistive force on the wooden floor?

Circle **one** answer in the box below to complete the sentence.

The resistive force on carpet is

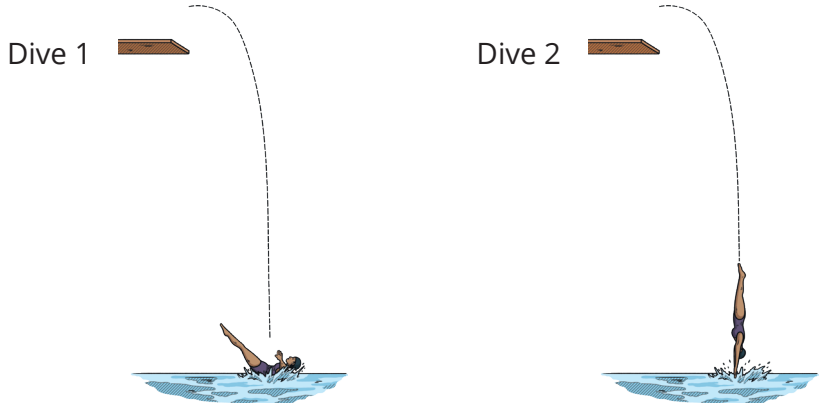
higher than
the same as
lower than

the resistive force on the wooden floor.

f) Circle the correct words in the paragraph below to explain the change in the resistive force.

Carpet produces a **larger/smaller** amount of friction than the wooden floor. This is because it is more **rough/smooth**. This causes the surfaces to **displace/grip** meaning a greater force is required to move the block.

3. A girl is practising diving into a swimming pool. The first time she dives, she hits the water on her back. Her second dive goes perfectly and she enters the water vertically with her fingers first. Both dives are shown in the diagram below.



The water resistance on her first dive was 1470N. The water resistance on her second dive was 60N.

Circle the correct words in the paragraph below to explain why the water resistance was reduced on her second dive.

The water resistance on the second dive was much lower because she was **more/less** streamlined. This means she collided with **more/fewer** particles when entering the pool and it was **easier/harder** for water particles to move around the diver.

4. Dennis goes skydiving. He falls for two minutes before the parachute is opened. Just before the parachute is pulled Dennis is travelling at a **constant speed**. Dennis has a weight of 750N.

a) What is the name of the resistive force acting against Dennis?

_____

b) What is the magnitude of this force?

Tick **one** box.

- ☐ <750N
- ☐ exactly 750N
- ☐ >750N

Dennis pulls the cord to release the parachute. This produces a resistive force of 4000N.

c) Circle the correct words in the paragraph below to explain why there is a big increase in the resistive force.

There is a big increase in the resistive force because the parachute has a **larger/smaller** area. This means it traps **more/fewer** air particles than before. Which produces a large force in the **opposite/same** direction as his fall.

d) How does Dennis's speed change when he opens the parachute?

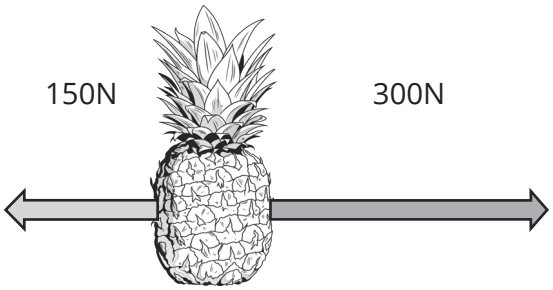
_____

Resistive Forces **Practice Questions Answers**

1. The diagrams below show the forces acting on a stationary object

   Circle the correct description to show what will happen to the object.

   a)

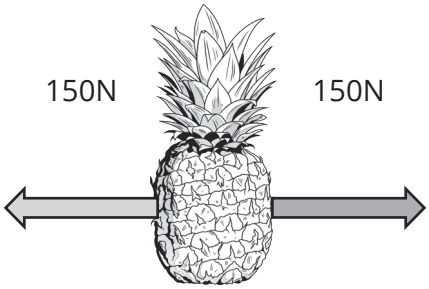


move left

stay still

move right

   b)

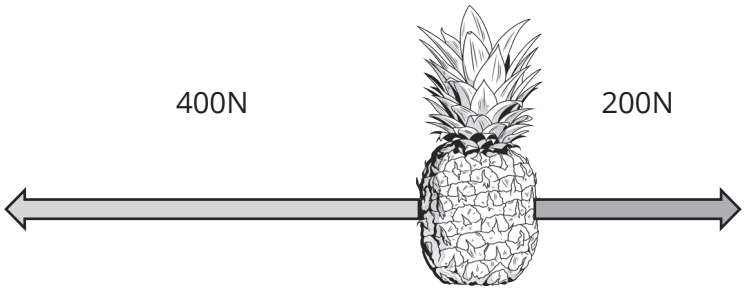


move left

stay still

move right

   c)

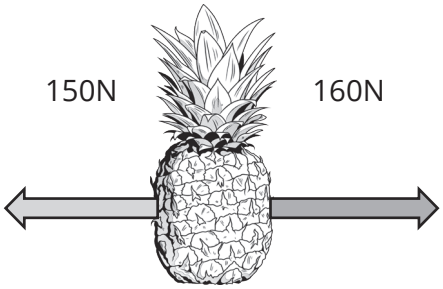


move left

stay still

move right

   d)



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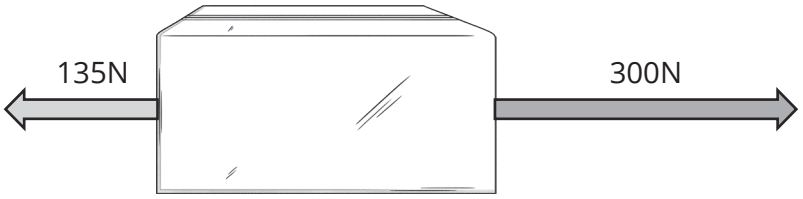

Students may have swapped the directions of the arrows, this is ok since the direction the box is being pulled isn't specified in the question.

d) What is the effect of the forces on the motion of the box?

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move at a constant speed
slow down

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The box is then pulled with the same force of 300N but this time on a carpet.

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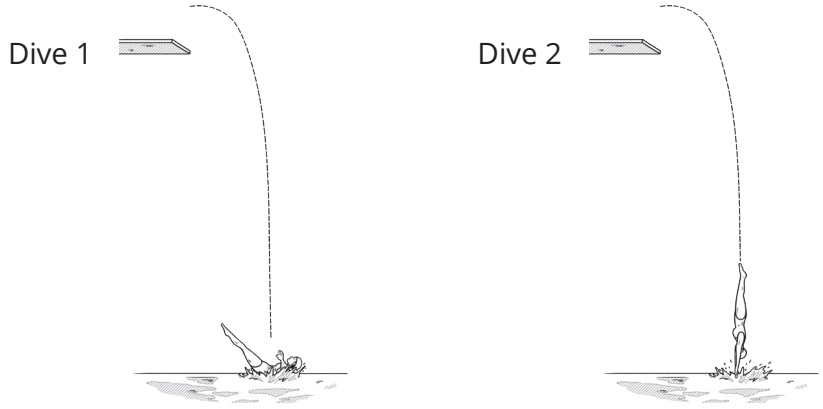

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air resistance

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He slows down.