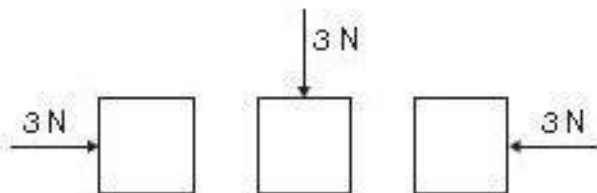


- 1 A force is acting on each of the objects below.

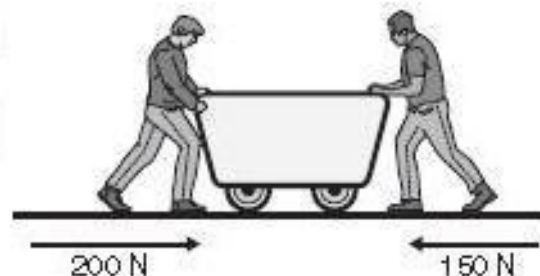


What can be concluded about these forces?

- A They are the same because they point toward the objects.
- B They are the same because they have the same magnitude.
- C They are different because they have different magnitudes.
- D They are different because they have different directions.

025229

- 2 Two students are pushing a cart, as shown below.



The cart will move as if it were acted on by a single force with a magnitude of

- A 50 N.
- B 150 N.
- C 200 N.
- D 350 N.

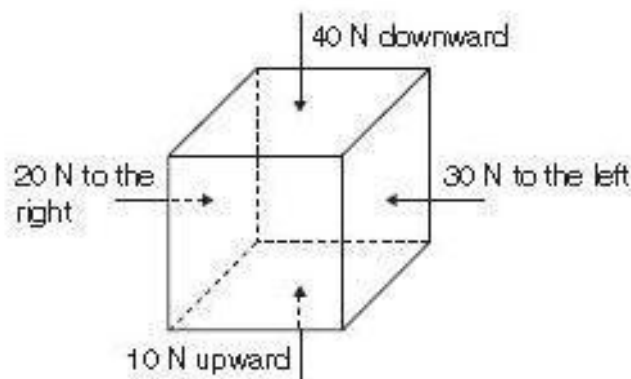
025229

- 3 A ball is dropped from the top of a tall building. As the ball falls, the upward force of air resistance becomes equal to the downward pull of gravity. When these two forces become equal in magnitude, the ball will

- A flatten due to the forces.
- B fall at a constant speed.
- C continue to speed up.
- D slow to a stop.

025229

- 4 Four forces are acting on a box, as shown below.



This box will increase in speed

- A downward and to the left.
- B downward and to the right.
- C upward and to the left.
- D upward and to the right.

025229

5 A force of 5 N is required to increase the speed of a box from a rate of $1.0 \frac{\text{m}}{\text{s}}$ to $3.0 \frac{\text{m}}{\text{s}}$ within 5 s along a level surface. What change would *most likely* require additional force to produce the same result?

- A reduce the mass of the box
- B increase the mass of the box
- C make the surfaces of the box smooth
- D make the surface of the floor smooth

CSZ009

6 What is the density of a 64-g iron cube that displaces 8 mL of water?

- A $512 \frac{\text{g}}{\text{mL}}$
- B $32 \frac{\text{g}}{\text{mL}}$
- C $8 \frac{\text{g}}{\text{mL}}$
- D $4 \frac{\text{g}}{\text{mL}}$

CSZ009

7 A piece of pine wood floats on the surface of a lake because the water exerts

- A an upward force equal to the weight of the wood.
- B a downward force equal to the weight of the wood.
- C an upward force equal to the weight of the displacement water.
- D a downward force equal to the weight of the displacement water.

CSZ009

8 The following table shows properties of four different sample materials. One of these materials is cork, a type of wood that floats in water.

Physical Properties

Sample Number	Mass	Volume
1	89 g	10 mL
2	26 g	10 mL
3	24 g	100 mL
4	160 g	100 mL

Given that the density of water is $1 \frac{\text{g}}{\text{mL}}$, which of the samples is *most likely* cork?

- A 1
- B 2
- C 3
- D 4

CSZ009

Answers:

1. D

2. A

3. B

4. A

5. B

6. C

7. C

8. C