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Solution 51
The wall will receive equal momentum from both the balls because both balls have equal mass and velocity.
Solution 52
In this case, the bicycle has been compelled to change its state of motion by the external force of air resistance and friction. If there were no air resistance and no friction to oppose the motion of the bicycle, then according to the first law of motion, the bicycle would go on moving forever.
Solution 53
Mass of ball = 500 g = 0.5 kg
Initial velocity = 10 m/s
i) Initial momentum = 0.5 x 10 = 5 kg.m/s
ii) Velocity at the highest point = 0 m/s
Momentum at the highest point = 0.5 x 0 = 0 kg.m/s
Solution 54
The two forces acting on the car are force of friction and air resistance. Force of friction contributes more to slow down and stop the car.
Solution 55
a) X are unbalanced force.
b) Y are balanced forces.

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Solution 1
Force corresponds to the rate of change of momentum.
Solution 2
The rate of change of momentum of a body is directly proportional to the applied force and takes place in the direction in which the force acts.
Solution 3
The SI unit of force is newton(N)
Solution 4
A newton force is
defined as that force which when acting on a body of mass of 1 kg produces an acceleration of $1m/s^2$ in it.
Solution 5
Force acting on a body is directly proportional to the acceleration produced in the body.

Force acting on a body is directly proportional to the acceleration produced in the body.

$F \propto a$

Solution 6

Acceleration remains same since

$$a = \frac{F}{m}$$

Now if force is doubled i.e. 2F and mass is doubled i.e. 2m

Then acceleration $a = \frac{2F}{2m} = \frac{F}{m}$

Acceleration remains same since
Now if force is doubled i.e. 2F and mass is doubled i.e. 2m
Then acceleration

Solution 7
Newton is the SI unit of force.
Solution 8
Jet airplanes work on the principle of conservation of momentum.
Solution 9
Rockets work on the principle of conservation of momentum.
Solution 10
True, because rocket does not require air for obtaining uplift or for burning its fuel.
Solution 11
Mass, m = 1 kg
Acceleration, a = $1m/s^2$
Force F = m x a = 1 x 1= 1N
Solution 12
Force F =5 N
Mass m = 10 kg

$$\text{Force } F = 5 \text{ N}$$
$$\text{Mass } m = 10 \text{ kg}$$
$$\text{Acceleration } a = \frac{F}{m} = \frac{5}{10} = 0.5 \text{ m/s}^2$$

Solution 13
The force exerted by the floor on her = the downward force exerted by the girl =250 N
This is due to Newton's third law of motion which states that to every action there is an equal and opposite reaction.
a= F/M
Solution 14
Less mass of the small car makes it easier to accelerate a small car than a large car because acceleration is inversely
proportional to mass of the car
Solution 15
a) Equal; opposite
b) Vector; kg.m/s
c) Acceleration; rate; momentum
d) Magnitude; directions
e) Momentum; force
Solution 16
Force is directly proportional to the product of 'mass' of the body and the 'acceleration' produced in the body by the action of force.
F = m x a
where F is the force applied on the body
m is the mass of the body
a is the acceleration produced in the body
Solution 17
To take boat away from the bank of a river, the boatman pushes the bank with the oar. The bank exerts an equal and opposite force on the boat which makes the boat move forward away from the bank.
Solution 18
Gunman gets a jerk on firing a bullet because when a bullet is fired from a gun, the force sending the bullet forward is equal to the force sending the gun backwards but due to high mass of the gun, it moves only a little distance backwards giving a jerk to the gunman.
Solution 19
To make the cart move, the horse bends forward and pushes the ground with its feet. When the forward reaction to the backward push of the horse on the ground is greater than the opposing frictional forces of the wheels, the cart moves.

********** END **********