

Part A: Very common Forces

<p>Contact Force</p> <p>Any force caused by actually hitting something. Examples: Pushes, punches, pulls, kicks, head butt</p>
<p>Gravity</p> <p>The force of all masses attracting all other masses.</p>
<p>Weight</p> <p>The force of gravity pulling you down on earth.</p>
<p>The Normal Force</p> <p>A force that holds something up, opposite the force of gravity. Examples: if you sit in a chair, the chair holds you up. If you are standing on the floor, the floor holds you up.</p>
<p>Friction</p> <p>A force that always resists motion Prevents things from sliding</p>
<p>Air Resistance (also called drag)</p> <p>The force of air pushing on something as it moves. Air resistance affects things that have a large surface area?</p>

A.1 What type of force if it if you get punched in the stomach?

A.2 What force makes you fall down? [2 possible answers]

A.3 What is another name of gravity, when you are on earth?

A.4 What force keeps your books from sliding off the table?

A.5 What force is low when you are on ice?


A.6 What force holds you up when you sit in a chair?


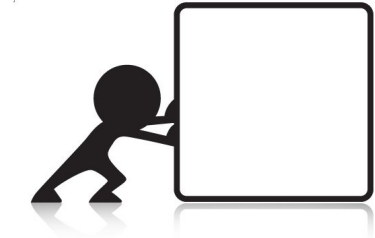
A.7 What force do you feel if you put your hand out the window of a speeding car?

Part B: Free Body Diagrams 1

Examples:

GIVE THE ANSWERS TO THESE!!!

Situation	Free Body Diagram (of person)
<p>Sitting in a chair</p> 	<p>2 forces</p>

<p>Situation</p> <p>Lifting weights</p>  <p>2</p>	<p>Free Body Diagram (of box)</p> <p>2 forces</p>
<p>Situation</p> <p>Pushing a box across the floor.</p>  <p>3</p>	<p>Free Body Diagram (of box, 4 forces)</p>

Situation
Falling down with a low velocity



4

Free Body Diagram (one force)

Situation

Falling down with a high velocity



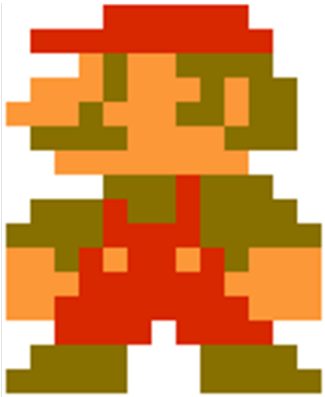
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Free Body Diagram (one force)

Problems:

B.1

Someone standing still



5

Free Body Diagram (of person)
2 forces

B.2

Someone holding up a box



6

Free Body Diagram (of box)
2 forces

B.3

An inanimate object falling down (low velocity)



7

Free Body Diagram (of object)
1 forces

B.4

Someone pushing something other than a box, (like a couch)



8

Free Body Diagram (of couch)
4 forces

Identifying Forces and Free-Body Diagrams Name _____

Part C:

<p>Tension</p> <p>The force of a rope pulling.</p>
<p>Elastic Force</p> <p>A force of something elastic that has been stretched and wants to snap back.</p> <p>- occurs when you change the shape of something and it wants to return to its original</p> <p>examples</p> <p>- springs, slinkies,</p>
<p>Thrust</p> <p>The force of an engine pushing something forward.</p>
<p>Air Pressure</p> <p>The force of air pressing on everything around it.</p> <p>Exists constantly in your life.</p>
<p>Lift</p> <p>A force that pushes up when air pressure is reduced below an airplane wing.</p> <p>Allows an airplane to fly</p>
<p>Buoyancy</p> <p>The force of water pressing up on something inside.</p> <p>This is the force that allows a boat to float.</p>

C.1 What floats your boat?

C.2 If it is too strong inside of a balloon, balloon will pop.

C.3 What force pushes an airplane forward?

Identifying Forces and Free-Body Diagrams Name _____

C.4 What is the force on each group in a game of tug-o-war?

C.5 What force allows an airplane to fly?

C.1 A car accelerating



11

4 forces (excluding friction on wheels)

C.2 Air in a balloon



12

2 forces

C.3 Airplane flying



10

4 forces

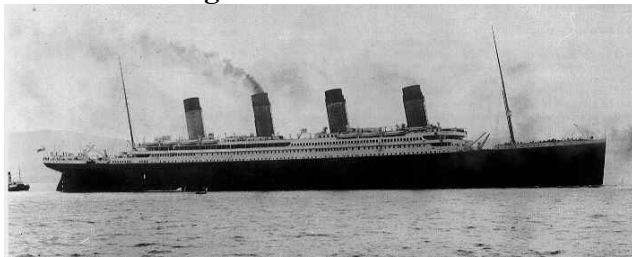
C.4 Boat floating



13

2 forces

C.5 Boat sailing



14

4 forces

C.6 Hot Air Balloon



15

4 forces

C.7 Person hanging on a rope



Free-Body Diagram (2 forces)

C.8

An arrow as it is released from a bow

Free-Body Diagram (2 forces)

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¹<http://www.clipartkid.com/person-in-chair-clip-art-at-clker-com-vector-clip-art-online-d9Gxvb-clipart/>

²<http://www.livestrong.com/article/439458-slow-reps-vs-fast-reps/>

³<http://toly.dvrlists.com/push/>

⁴<http://www.icône.com/tag-homme-0>

⁵ <https://www.roblox.com/Mario-SMB1-NES-Sprite-Standing-Left-item?id=140270833>

⁶http://www.123rf.com/photo_2816015_delivery-man-holding-big-box-on-white-background.html

⁷<http://toonclips.com/design/7518>

⁸<https://brianmartone.com/2014/02/14/pushing-goon/>

⁹ <http://www.dailymail.co.uk/news/article-1058012/What-NOT-die-.html>

¹⁰<http://www.dailypicsupdate.com/hd-airplane-desktop-wallpaper/airplane-flying-in-sky-pictures/>

¹¹<https://www.reference.com/vehicles/car-shudder-accelerating-2f9ab7c49538c589>

¹²<https://www.dreamstime.com/royalty-free-stock-photography-man-blowing-up-balloon-blue-background-image40798577>

¹³<https://www.pinterest.com/pin/453034043740971742/>

¹⁴<http://www.historyfreak.com/slideshows/32-insane-titanic-facts-you-wont-believe/>

¹⁵<http://www.govisitcostarica.com/travelInfo/day-trips/hot-air-ballon.asp>

¹⁶<http://www.johnlund.com/page/1649/woman-at-the-end-of-her-rope.asp>