

Recognizing Forces

Objective: To utilize an understanding of the various types of forces in order to analyze a given situation and to identify the presence or absence of a variety of force types.

Question Group 1

Question 1

Consider this situation: A book is at rest upon a table.

Of the forces listed, identify which act upon the book.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 2

Consider this situation: A car is parked along a level road.

Of the forces listed, identify which act upon the car.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 3

Consider this situation: A person stands at rest on the floor.

Of the forces listed, identify which act upon the person.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 2

Question 4

Consider this situation: A football travels upward and rightward through the air.

Of the forces listed, identify which act upon the football.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 5

Consider this situation: A baseball travels upward and rightward through the air.

Of the forces listed, identify which act upon the baseball.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 6

Consider this situation: A golf ball travels upward and rightward through the air.

Of the forces listed, identify which act upon the golf ball.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 3**Question 7**

Consider this situation: A skydiver is falling towards the ground at a constant speed.

Of the forces listed, identify which act upon the skydiver.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 8

Consider this situation: A feather is falling towards the ground at a constant speed.

Of the forces listed, identify which act upon the feather.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 9

Consider this situation: A coffee filter is falling towards the ground at a constant speed.

Of the forces listed, identify which act upon the coffee filter.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 4**Question 10**

Consider this situation: A bucket of water, attached to a rope, is being pulled upward out of a well.

Of the forces listed, identify which act upon the bucket.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 11

Consider this situation: Four ropes, each attached to the end of a freight elevator, are used to pull the small elevator upward through a wide elevator shaft.

Of the forces listed, identify which act upon the elevator.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 12

Consider this situation: A rope is used to lift an actor upward off the stage.

Of the forces listed, identify which act upon the actor.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 5

Question 13

Consider this situation: A force is applied to a box to move it to the right across the kitchen floor.

Of the forces listed, identify which act upon the box.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 14

Consider this situation: A custodian pushes a large crate across the gym floor.

Of the forces listed, identify which act upon the crate.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 15

Consider this situation: A team of landscapers pull an unplanted tree across the lawn.

Of the forces listed, identify which act upon the tree.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 6

Question 16

Consider this situation: A moving car skids to a stop with the wheels locked across a level roadway.

Of the forces listed, identify which act upon the car.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 17

Consider this situation: A moving shuffle board disk skids to a stop across an asphalt surface.

Of the forces listed, identify which act upon the book.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 18

Consider this situation: A baseball player dives head-first into second base and slows down while sliding on the infield dirt.

Of the forces listed, identify which act upon the player.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 7**Question 19**

Consider this situation: A sledder is moving to the right across unpacked snow and skidding to a stop.

Of the forces listed, identify which act upon the sledder.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 20

Consider this situation: A book is sliding to a stop while moving across the classroom floor.

Of the forces listed, identify which act upon the book.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 21

Consider this situation: A root beer mug is slowing down as it slides across the counter top.

Of the forces listed, identify which act upon the mug.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 8**Question 22**

Consider this situation: A trapeze artist is swinging from a rope that is attached to the ceiling.

Of the forces listed, identify which act upon the trapeze artist.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 23

Consider this situation: A child is holding onto a tree rope and swinging through the air.

Of the forces listed, identify which act upon the book.

- | | | |
|-------------------|------------------------|-------------------------|
| a. Normal Force | b. Gravity Force child | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 24

Consider this situation: A pendulum bob, attached by a string to a pivot point, is swinging back and forth.

Of the forces listed, identify which act upon the pendulum bob.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 9

Question 25

Consider this situation: A block is at rest on an inclined plane.

Of the forces listed, identify which act upon the block.

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|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 26

Consider this situation: A book is at rest on a gently-inclined ramp;

Of the forces listed, identify which act upon the book.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 27

Consider this situation: A large crate is at rest on a ramp at a loading dock.

Of the forces listed, identify which act upon the crate.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question Group 10

Question 28

Consider this situation: A child pulls a sled by a rope across the lawn at a constant speed.

Of the forces listed, identify which act upon the sled.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 29

Consider this situation: A father uses a rope to pull a child on a sled at a constant speed.

Of the forces listed, identify which act upon the child.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |

Question 30

Consider this situation: A student attaches a rope to his book bag and drags the bag across the floor at a constant speed.

Of the forces listed, identify which act upon the book bag.

- | | | |
|-------------------|------------------|-------------------------|
| a. Normal Force | b. Gravity Force | c. Applied Force |
| d. Friction Force | e. Tension Force | f. Air Resistance Force |