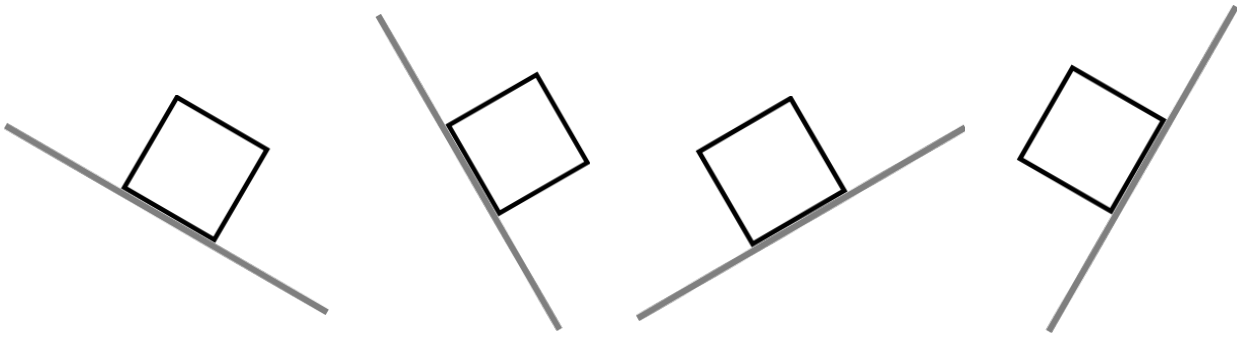
Inclined Plane - Free-Body Diagrams

Each Question Group includes 4 questions. Each question in the group utilizes a different inclined plane diagram - two right facing inclines and two left-facing inclines.



Question Group 1
Question 1
A box is sliding down a 30° incline. Consider friction. Construct the FBD.

Question 2
A box is sliding down a 60° incline. Consider friction. Construct the FBD.

Question 3
A box is sliding down a 30° incline. Consider friction. Construct the FBD.

Question 4
A box is sliding down a 60° incline. Consider friction. Construct the FBD.

Question Group 2
Question 5
A box is sliding up a 30° incline. Consider friction. Construct the FBD.

Question 6
A box is sliding up a 60° incline. Consider friction. Construct the FBD.

Question 7
A box is sliding up a 30° incline. Consider friction. Construct the FBD.

Question 8
A box is sliding up a 60° incline. Consider friction. Construct the FBD.

Question Group 3
Question 9
A box is sliding down a 30° incline (friction-free). Construct the FBD.

Question 10
A box is sliding down a 60° incline (friction-free). Construct the FBD.

Question 11
A box is sliding down a 30° incline (friction-free). Construct the FBD.

Question 12
A box is sliding down a 60° incline (friction-free). Construct the FBD.

Question Group 4
Question 13
A box is sliding up a 30° incline (friction-free). Construct the FBD.

Question 14
A box is sliding up a 60° incline (friction-free). Construct the FBD.

Question 15
A box is sliding up a 30° incline (friction-free). Construct the FBD.

Question 16
A box is sliding up a 60° incline (friction-free). Construct the FBD.

Question Group 5
Question 17
A rope is used to pull a box up a 30° incline. Consider friction. Construct the FBD.

Question 18
A rope is used to pull a box up a 60° incline. Consider friction. Construct the FBD.

Question 19
A rope is used to pull a box up a 30° incline. Consider friction. Construct the FBD.

Question 20
A rope is used to pull a box up a 60° incline. Consider friction. Construct the FBD.

Question Group 6
Question 21
A person pushes a box up a 30° incline. Consider friction. Construct the FBD.

Question 22
A person pushes a box up a 60° incline. Consider friction. Construct the FBD.

Question 23
A person pushes a box up a 30° incline. Consider friction. Construct the FBD.

Question 24
A person pushes a box up a 60° incline. Consider friction. Construct the FBD.

Question Group 7
Question 25
A rope is used to pull a box up a 30° incline (friction-free). Construct the FBD.

Question 26
A rope is used to pull a box up a 60° incline (friction-free). Construct the FBD.

Question 27
A rope is used to pull a box up a 30° incline (friction-free). Construct the FBD.

Question 28
A rope is used to pull a box up a 60° incline (friction-free). Construct the FBD.

Question Group 8
Question 29
A person pushes a box up a 30° incline (friction-free). Construct the FBD.

Question 30
A person pushes a box up a 60° incline (friction-free). Construct the FBD.

Question 31
A person pushes a box up a 30° incline (friction-free). Construct the FBD.

Question 32
A person pushes a box up a 60° incline (friction-free). Construct the FBD.