
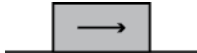
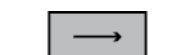
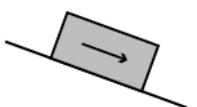
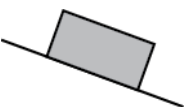
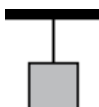

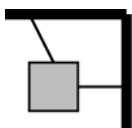
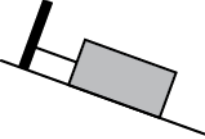
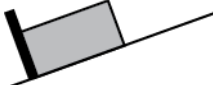

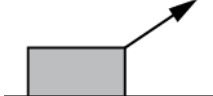

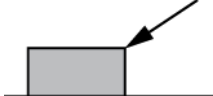




Worksheet 4-1 Free-Body Diagrams

In each of the following situations, represent the object with a particle. Sketch all the forces acting upon the object, making the length of each vector represent the magnitude of the force.

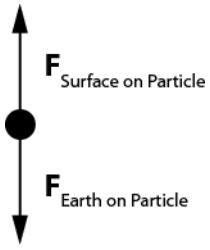
<p>1. Object lies motionless.</p> 	<p>2. Object slides at constant speed without friction.</p> 
<p>3. Object slows due to kinetic friction.</p> 	<p>4. Object slides without friction.</p> 
<p>5. Static friction prevents sliding.</p> 	<p>6. An object is suspended from the ceiling.</p> 
<p>7. An object is suspended from the ceiling.</p> 	<p>8. The object is motionless.</p> 

<p>9. The object is motionless.</p> 	<p>10. The object is motionless.</p> 
<p>11. The object is pulled by a force parallel to the surface.</p> 	<p>12. The object is pulled by a force at an angle to the surface.</p> 
<p>13. The object is pulled upward at constant speed.</p> 	<p>14. The object is pushed by a force applied downward at an angle.</p> 
<p>15. The object is falling (no air resistance).</p> 	<p>16. The object is falling at constant (terminal) velocity.</p> 

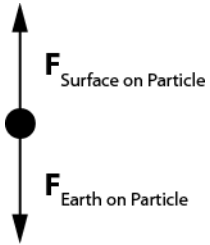
Physics P

Worksheet 4-1: Free-Body Diagrams

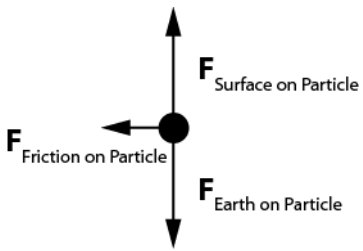
1.



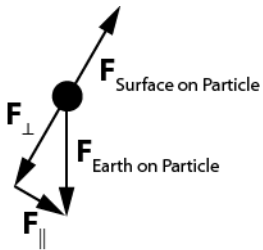
2.



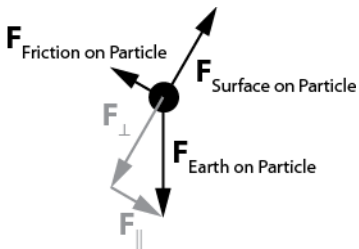
3.



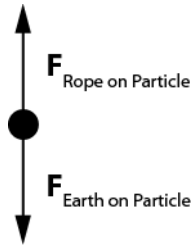
4.



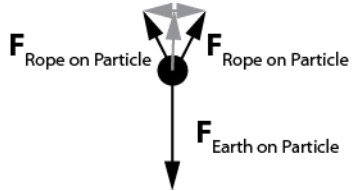
5.



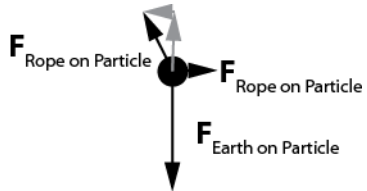
6.



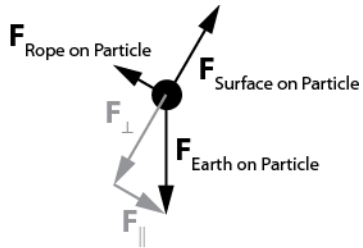
7.



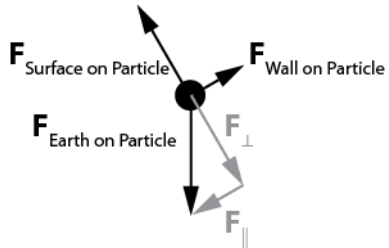
8.



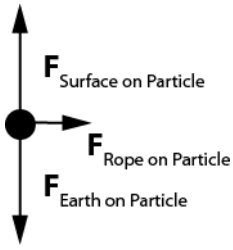
9.



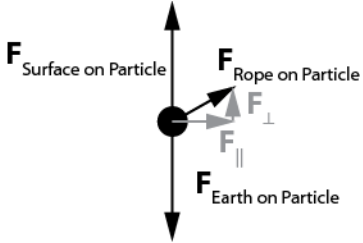
10.



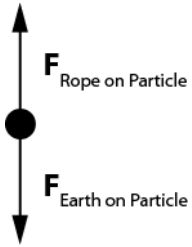
11.



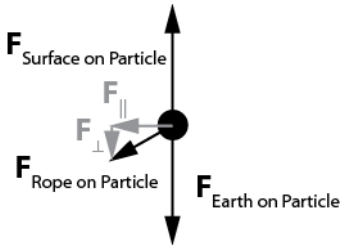
12.



13.



14.



15.



16.

