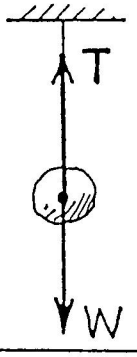
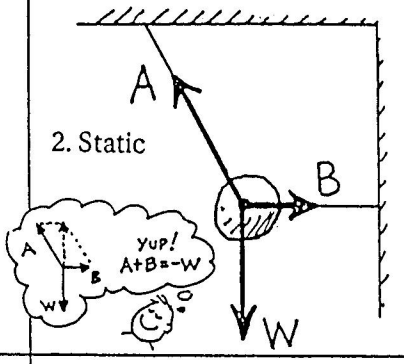
Force-Vector Diagrams

In each case, a rock is acted on by one or more forces. Draw an accurate vector diagram showing all forces acting on the rock, and no other forces. Use a ruler, and do it in pencil so you can correct mistakes. The first two are done as examples. Show by the parallelogram rule in 2 that the vector sum of **A** + **B** is equal and opposite to **W** (that is, **A** + **B** = -**W**). Do the same for 3 and 4. Draw and label vectors for the weight and normal forces in 5 to 10, and for the appropriate forces in 11 and 12.

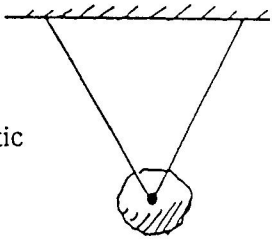
1. Static



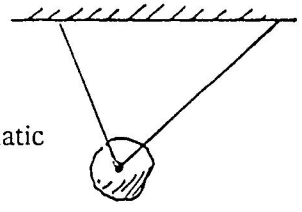
2. Static



3. Static



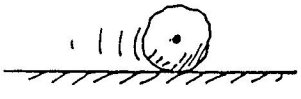
4. Static



5. Static

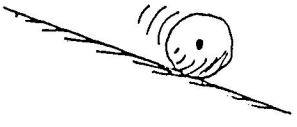
6. Sliding at constant speed without friction

7. Decelerating due to friction

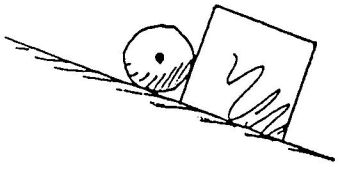


8. Static (Friction prevents sliding)

9. Rock slides (No friction)



10. Static



11. Rock in free fall

12. Falling at terminal velocity

thanx to Jim Court