

## Who Is Richer?

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You have 9.8 N of gold. You have an astronaut friend who is on the Moon. She also has 9.8 N of gold. Who is richer?

1. You are richer *few*
  2. Your friend is richer *60%*
  3. You are equally rich *40%*
- 100%*
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## You are at rest 1000 km above the surface of the Earth

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What happens to you?

1. Remain at rest as there is no gravity above the atmosphere. *0*
  2. Remain at rest as you are in a weightless state and therefore gravity is zero. *0*
  3. Gravity is very small and it will take a long time for you to fall back to Earth. *75%*
  4. Gravity is almost the same as near the Earth's surface and you will quickly fall back to Earth. *25%*
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At 1000 km,  $g$  is 75% of the value here.

You are in a spaceship orbiting the Earth  
1000 km above the Earth's surface.

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You step on bathroom scales. What will the  
scale read?

1. 75% of your weight as measured on the  
surface of the Earth. *10%*
  2. Your weight as measured at the surface of the  
Earth. *1 person*
  3. You feel weightless so your mass is zero and  
the reading is zero. *25%*
  4. Gravity causes the spaceship, you, and the  
scale to all freefall. You and the scale are at  
rest relative to each other so the reading is  
zero. *60%*
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