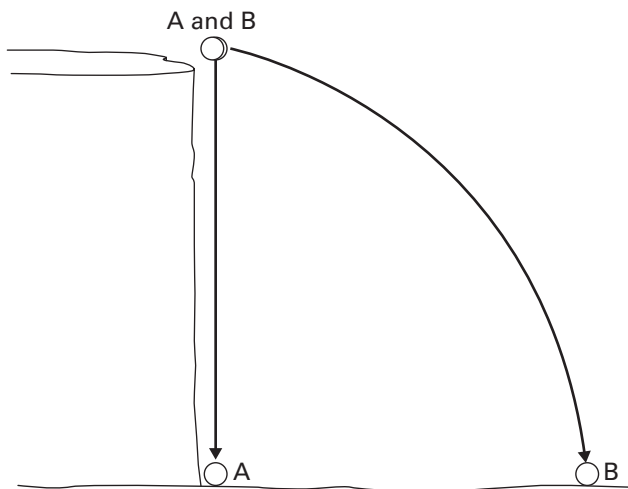


SECTION | GRAVITY IS A FORCE EXERTED BY MASSES.

3.1 Challenge and Extension**BIG IDEA** Newton's laws apply to all forces.**KEY CONCEPT** Gravity is a force exerted by masses.

The Acceleration of Gravity Masses attract each other with the force of gravity. The larger the masses, the larger the force of gravity. When you throw an object into the air, gravity acts to pull the object back down to Earth. At Earth's surface, gravity causes objects to accelerate toward Earth at a rate of 9.8 m/s^2 .

The picture below shows a ball being thrown from a cliff. At the same time, a second ball is dropped straight down from the cliff.



1. If both balls are released at the same time, which will hit the ground first? Explain your answer.

2. Ball B is thrown horizontally at a speed of 3 m/s . How far will it have gone horizontally after 2 seconds?

3. How fast will the dropped ball be going after 2 seconds? Show your work.
