

Gravity Practice - Version 2

- 1.) A cliff diver is on a 30.0 m high cliff. With what velocity should they leave the cliff, (assume the person jumps out horizontally) in order to miss 8.0 m of rock coming from the cliff's base?

2.) A mountain goat butts you off a 50.0 m high cliff with a horizontal velocity of $+3.0\frac{\text{m}}{\text{s}}$. How far from the base will you strike the ground?

3.) A golfer strikes a ball giving it a velocity of $35\frac{\text{m}}{\text{s}}$ at 35° . If the course is completely flat how far will the ball travel before bouncing?

4.) Use the information in #3 to find the maximum height to which the ball will rise.

5.) A cat leaps off a building (the crowd goes wild with applause) of height 30.0 m . If it left the building with a horizontal velocity of $+1.0 \frac{\text{m}}{\text{s}}$ will it land safely on some garbage bags 5.0 m from the base of the building?

6.) What will be the vertical velocity of the cat above at the exact moment of impact?

7.) A baseball is hit at $30.0 \frac{\text{m}}{\text{s}}$ on an angle of 40° , what is its maximum height?

8.) A stunt person jumps at $+5.0 \frac{\text{m}}{\text{s}}$ horizontally, if she just lands on an airbag 24.2 m from the base of a building how high was the building?

Bonus - A kid throws a rock on a 45° angle with velocity 10.0 m/s off a 10.0 m high cliff. How far from the base of the cliff will the rock land?