

Answers to selected questions

Chapter 3

Q6. Both pieces of paper should reach the bottom at the same time when there is no air resistance.

Q12. Yes. The rock is moving more slowly near the top of its flight so it takes more time to cover the same distance.

Q18. The ball rolled off the table top has the larger total velocity. Both balls have the same vertical velocity component when they hit the floor, but the rolled ball also has a horizontal velocity component that adds (as a vector) to the vertical component to yield a larger total velocity.

Q24. No. Both balls still have a non-zero horizontal velocity at the high point.

Q30. A high arching shot has a wider range of paths that will pass through the basket without hitting the rim.