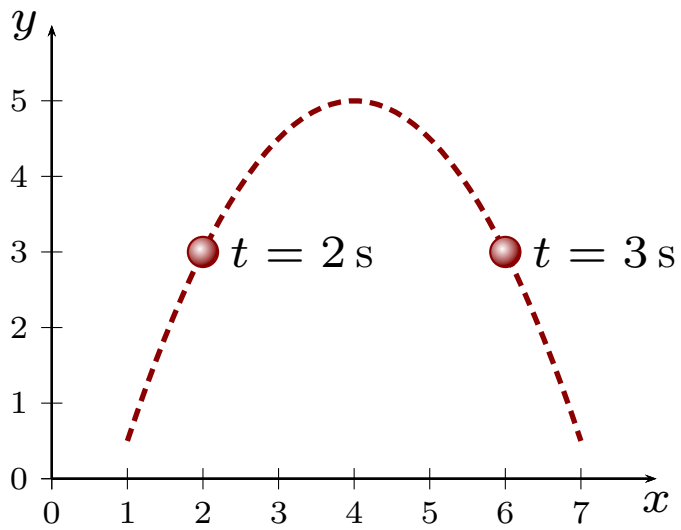
Warm Up Question 1

A ship passes the shore at a constant speed. At one instant a passenger, Angela, on the ship throws a basketball straight up (according to her). Brody standing on the shore observes this. According to Brody, will the ball land in Angela's hands, or behind Angela or in front of her? Ignore any air resistance. Explain your choice.

1. Fall behind. The ball travels vertically and the ship moves forward.
2. In her hands. The ball and ship move with the same speed.
3. In her hands. The ball and ship have the same horizontal velocity.
4. In her hands. Horizontal and vertical components of motion independent.

Question 1

A projectile moves along the indicated trajectory.



Which of the following is true regarding the average acceleration between the two instants?

1. Acceleration is zero.
2. $\vec{a}_{\text{avg}}$ has direction ←.
3. $\vec{a}_{\text{avg}}$ has direction →.
4. $\vec{a}_{\text{avg}}$ has direction ↓.
5. $\vec{a}_{\text{avg}}$ has direction ↘.

Warm Up Question 2

A projectile is fired from the ground at an angle of 60° above the horizontal. Is the velocity vector zero or not at the highest point of its trajectory? What is the direction of the velocity vector at the highest point? Explain your answers.

1. Zero at highest point. Slope is zero.
2. Zero. It starts to fall.
3. Not zero. It points horizontally.
4. Not zero. 60° above the horizontal.