Select the correct answer from the drop-down menu.



This grasshopper is jumping upward through the air before returning to a leaf. The grasshopper's position function can be described mathematically by the equation $y(t) = -3.6t^2 + 1.4t$. The grasshopper begins to descend to the leaf at [1. 0.194 ✓] seconds. Its maximum displacement is [2. 0.14 ✓] meters.

1. 0.194 ✓

2. 0.14 ✓

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Enter your answer in the space provided.



Omran is sitting on one end of a seesaw. When Farag sits on the other end of the seesaw, Omran moves upward, reaching his highest point just as Farag reaches the ground. If the position function for Omran's movement can be described by the quadratic equation $y(t) = -7.2t^2 + 5.5t$, where the position is in meters and the time is in seconds. The maximum displacement of Omran is 1. 1.05 ✓ m.

Write your answer to 3 significant figures.

1. 1.05 ✓

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Select the best answers.

Which two of these equations correspond to this position function $y(t) = -4.5t^2 + 0.2t$?

- [x] At the maximum displacement: $0 = -9t + 0.2$ ✓
- [ ] $v(t) = -9t + 0.2t$
- [ ] At the maximum displacement: $0 = -9t + 0.2t$
- [ ] At the maximum displacement: $0 = -9t - 0.2$
- [ ] $v(t) = 9t + 0.2$
- [x] $v(t) = -9t + 0.2$ ✓

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Select your answer from the drop-down menu.

Haya is playing a game of catching the ball when her ball enters a nearby lake. It falls below the surface but comes back up again. The ball's position in the water can be described by the quadratic equation $y(t) = 4.1t^2 - 3.2t$. The minimum displacement of Haya's ball in the water is

1. - 0.62 m ✓ .

1. - 0.62 m

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✓

Enter your answer in the space provided.



Omar is a marine biologist scuba diving from a boat. He dove down to the lowest point to pick up a sample from the sea. Omar's dive can be described mathematically by the position function $y(t) = 15\,t^2 - 4\,t$. Omar's minimum displacement is

1. -0.27 ✓ meters.

Write your answer to 2 significant figures.

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1. -0.27 ✓

Enter your answer in the space provided.

Dana throws a ball upward. Its position function can be described by the equation $y(t) = -3.2t^2$ $+1.8t$. The maximum displacement is 1. 0.25 m ✓.

Write your answer to 2 significant figures.

1. 0.25 m ✓

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