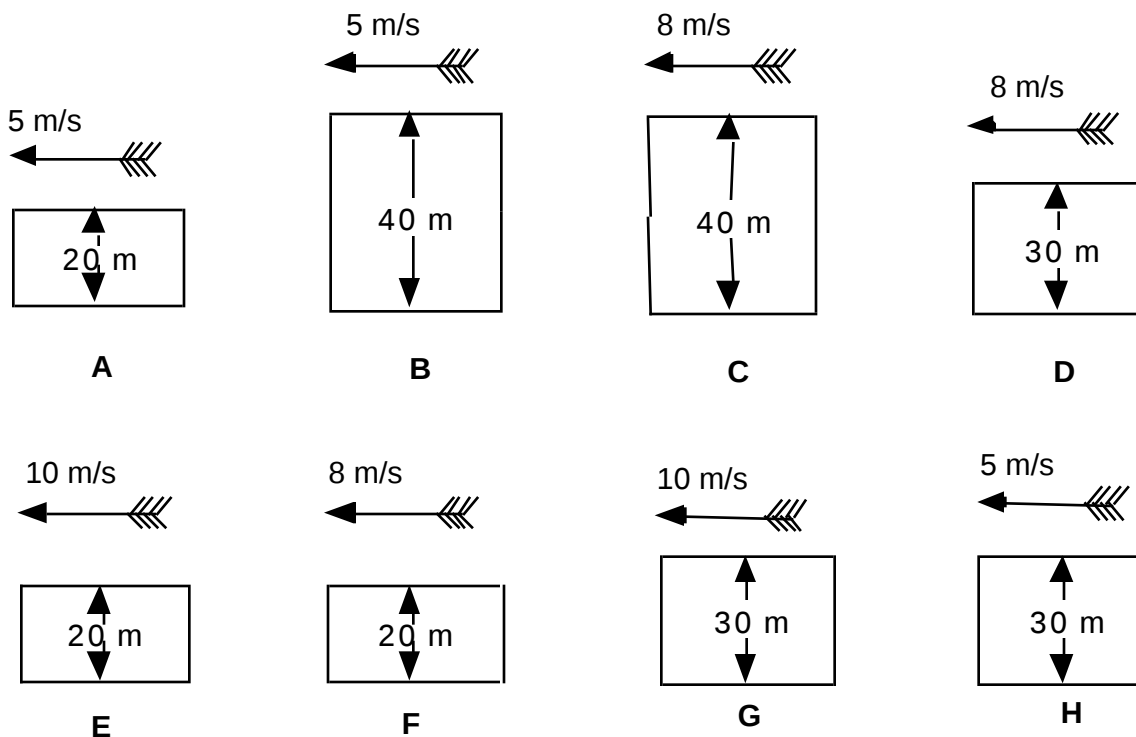


Horizontal Arrows—Time to Hit Ground ⁴⁵

Pictured below are eight arrows that have been shot horizontally, i.e., straight out, by archers on platforms. All of the arrows are identical, but they have been shot at different speeds from platforms of varying height. Specific values for the speeds and of varying heights are given in the figures. All of the arrows miss the targets and hit the ground.

Rank these arrows, from longest to shortest, on the basis of how long it takes the arrows to hit the ground. That is, put first the arrow that will take the longest time from being shot to hitting the ground, and put last the arrow that will take the shortest time.



Longest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ Shortest

Or, all of the arrows hit the ground at the same time. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1 2 3 4 5 6 7 8 9 10

⁴⁵ D. Maloney