Motion along a straight line

These are the problems that you and a team of other 2-3 students will be asked to solve during the recitation session next week. Your team can do better if you think about the approach and explanation for each of these problems BEFORE coming to class.

1. Catching the Train

You are going to Oklahoma City for the weekend and you decide to go first-class by taking the Amtrak train. Unfortunately, you are late finishing your physics exam, so you arrive late at the train station. You run as fast as you can, but just as you reach the platform your train departs, ______ meters ahead of you down the platform. You can run at a maximum speed of ______ m/s and the train is accelerating at _____ m/s². You can run along the platform for ______ meters before a barrier prevents you from going further.

Will you catch your train? (yes or no)______ Justify your answer by showing a full solution.

2. Falling Brick

As you are cycling to classes one day, you pass a construction site for a new building on Texas Ave and stop to watch for a few minutes. A crane is lifting a batch of bricks on a pallet to an upper floor of the building. Suddenly, a brick falls off the rising pallet. You clock the time it takes the brick to hit the ground at ______ seconds. The crane, fortunately, has height markings, and you see the brick fall off the pallet at a height of ______ meters above the ground. A falling brick, as we all know, can be dangerous, and you wonder how fast the brick was going when it hit the ground.

Since you are taking physics, you quickly calculate the answer: ________. Justify your answer by showing a full solution.

Approach: Under this tab, list the steps taken by your team for finding each solution. You answer here the questions WHAT? and HOW?

Approach 1.
Explanation: Under this tab, explain why your team has chosen those approaches. You answer here the questions WHY? and WHEN?

Explanation 1.

Explanation 2.