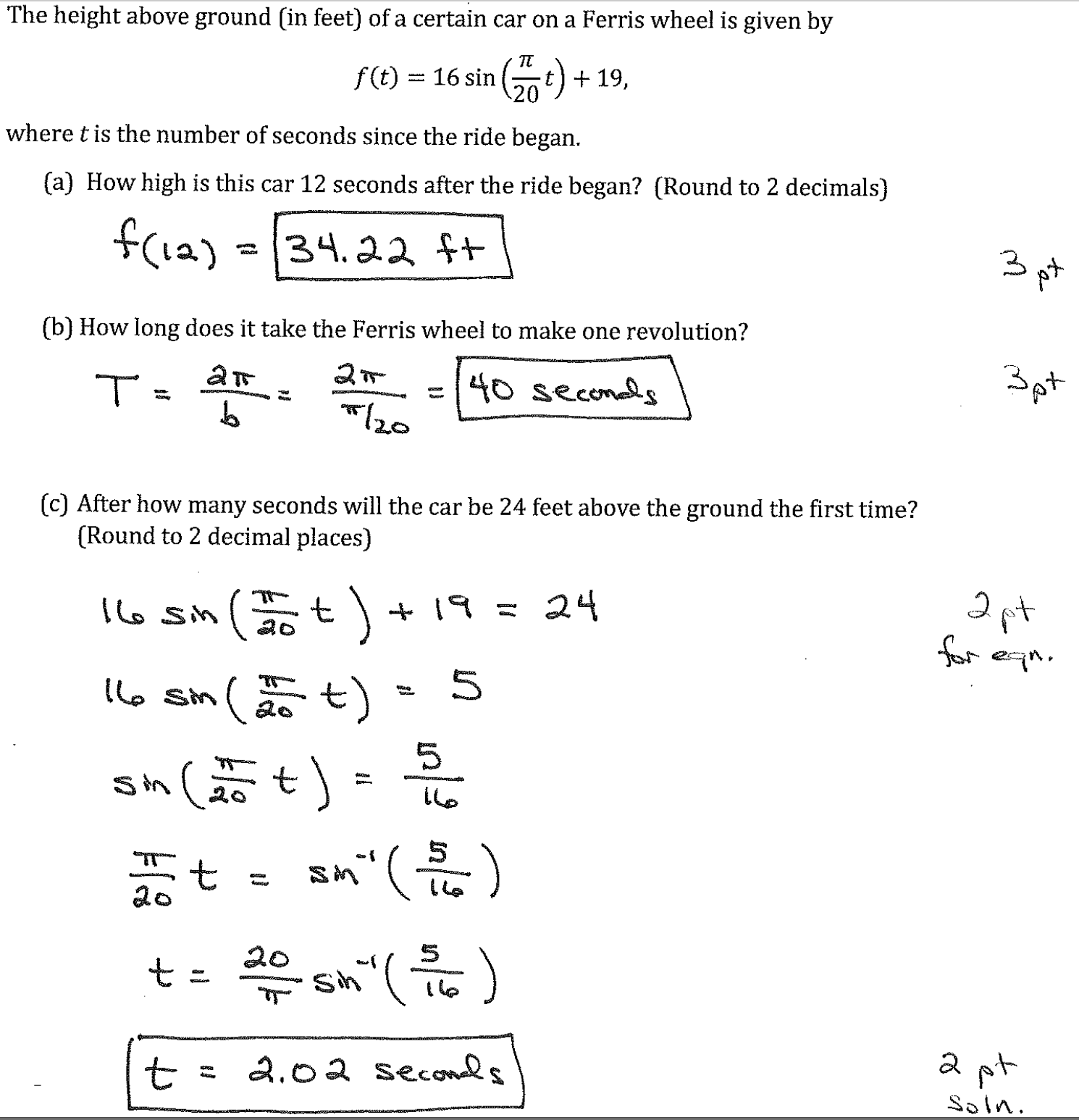
**Exam Assessment Questions for Math 2417**



1. Suppose that and. Find the following: *(2 points each)*

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1. Suppose we have tank of bacteria growing in ideal conditions. In the beginning, we had 16 grams of bacteria in the tank and after 5 days there was 25 grams. Assume the amount of bacteria after t days is given by the formula where is the amount of bacteria (in grams) at time t = 0.

Questions:

1. What is the value of k?
2. Approximately how much bacteria was in the tank at the end of 3 days?
3. When will there be 50 grams of bacteria in the tank?
4. How many days does it take for the bacteria to double its weight?

Method of solution:

1. Solve the equation to get . ***(3 points)***
2. Compute A(3) by grams of bacteria.

***(2 points)***

1. Solve the equation for t to get days. ***(3 points)***
2. Solve the equation for t to get days. ***(2 points)***
3. Show that

Solution: Note: many correct derivations exist. One is shown here.

***(each step is worth 2 points)***