Jose's Surfboard Task

Jose rents a surfboard for the day from a company that charges by the hour. The graph below shows the cost of renting a surfboard for different amounts of time.

1. What is the rental rate per hour for the surfboard? Explain your reasoning.

The rental rate per hour is 5.

You can find/see that by looking at the relationship of the ordered pairs (all fractions that are found using rise/run =5) or by using slope formula with two points to calculate the slope/rate of change).
2. If the cost continues at this rate, calculate the cost of renting a surfboard for 12 hours. Show all work and explain your reasoning.

After finding the rate of change to be 5, it would be best to find the equation to help answer this.

\[ y = 5x + 25 \]

They give you an x-value (12 hours), you can input it in for x and solve for y (total cost).

\[ y = 5(12) + 25 \]
\[ y = 60 + 25 \]
\[ y = 85 \]

3. Calculate the number of hours that Jose surfs if the rental cost is $150.00. Show all work and explain your reasoning.

Using the same equation from #2, this time they give you the y-value (total cost) and you can input that in for y and solve for x (# of hours).

\[ 150 = 5x + 25 \]
\[ -25 \]
\[ 125 = 5x \]
\[ \frac{125}{5} = \frac{5x}{5} \]
\[ 25 \text{ hours} = x \]
4. Is the domain of the function the same as the domain of the problem situation?

Remember:
Domain of function ≠ Domain of scenario

\[ y = 5x + 25 \]  
# of hours

Decimals? Yes  Decimals? No
Negatives? Yes  Negatives? No
(Real numbers)  (Whole numbers)

No, it is not the same.

Chart for Domain of a Problem Situation

<table>
<thead>
<tr>
<th>Negatives?</th>
<th>Decimals?</th>
<th>Domain for the Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Real Numbers</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Integers</td>
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<tr>
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<tr>
<td>No</td>
<td>No</td>
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