Let $P(t)$ be given by the following table:

<table>
<thead>
<tr>
<th>$t$</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P(t)$</td>
<td>58.00</td>
<td>49.30</td>
<td>41.91</td>
<td>35.62</td>
</tr>
</tbody>
</table>

(1) Explain why this function is an exponential. (As usual this will involve both doing some calculations and writing an English sentence explaining why the calculations are relevant.)

The numbers are (to 2 decimal places):

1. $\frac{49.30}{58.00} = 0.85$
2. $\frac{41.91}{49.3} = 0.85$
3. $\frac{35.62}{41.91} = 0.85$

$\Rightarrow$ The numbers are constant so it is an exponential function for computing 1 pt for the numbers.

(2) Give a formula for $P(t)$.

$P(t) = P_0 \cdot a^t$

In our case $P_0 = P_{01} = 58.0$

and we have just computed $a$ to be $a = 0.85$

1 pt for correct $P_0$
1 pt for correct $a$. 
