Estimate and then solve each problem. Model the problem with a tape diagram. Explain if your answer is reasonable.

1. For the bake sale, Connie baked 144 cookies. Esther baked 49 more cookies than Connie.
   a. About how many cookies did Connie and Esther bake? Estimate by rounding each number to the nearest ten before adding.
   b. Exactly how many cookies did Connie and Esther bake?
   c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.
2. Raffle tickets were sold for a school fundraiser to parents, teachers, and students. 563 tickets were sold to teachers. 888 more tickets were sold to students than to teachers. 904 tickets were sold to parents.

a. About how many tickets were sold to parents, teachers, and students? Round each number to the nearest hundred to find your estimate.

b. Exactly how many tickets were sold to parents, teachers, and students?

c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.
3. From 2010 to 2011, the population of Queens increased by 16,075. Brooklyn’s population increased by 11,870 more than the population increase of Queens.

   a. Estimate the total combined population increase of Queens and Brooklyn from 2010 to 2011. (Round the addends to estimate.)

   b. Find the actual total combined population increase of Queens and Brooklyn from 2010 to 2011.

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.
4. During National Recycling Month, Mr. Yardley’s class spent 4 weeks collecting empty cans to recycle.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Cans Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,827</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10,522</td>
</tr>
<tr>
<td>4</td>
<td>20,011</td>
</tr>
</tbody>
</table>

a. During Week 2, the class collected 1,256 more cans than they did during Week 1. Find the total number of cans Mr. Yardley’s class collected in 4 weeks.

b. Assess the reasonableness of your answer in (a) by estimating the total number of cans collected.