Name Jack Date _____

Directions: 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.

144 ≈ 140
49 ≈ 50

140
+ 50
190

Connie and Esther baked about 190 cookies.

   b. Exactly how many cookies did Connie and Esther bake?

144
+ 49
193

Connie and Esther baked 193 cookies.

   c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.

Yes, my answer is reasonable. I estimated that Connie and Esther baked 190 cookies. If I round my actual answer, 193, to the nearest tens place, I get 190.

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. How many tickets were sold to parents, teachers, and students?

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

   563 ≈ 600 to teachers
   888 ≈ 900 + 600 = 1500 to students
   904 ≈ 900 to parents

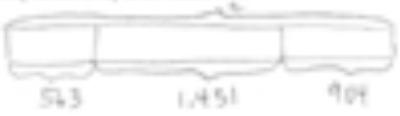
   1,500
   600
   + 900
   3,000

   About 3,000 tickets were sold to parents, teachers, and students.

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

   563
   1,451
   + 904
   2,918

   563
   + 888
   1,451

   2,918 tickets were sold to parents, teachers, and students.

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

   My answer of 2,918 is reasonable because 2,918 rounded to the nearest thousand is 3,000 which was my estimate.

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.)

   16,075 ≈ 16,000
   11,870 ≈ 12,000
   28,000

   The total combined population increase is about 28,000.