1. a. Find the actual sum either on paper or using mental math. Round each addend to the nearest hundred and find the estimated sums.

A

451 + 253 = 704
500 + 300 = 800

451 + 249 = 700
500 + 200 = (700)

448 + 249 = 697
400 + 200 = 600

Circle the estimated sum that is the closest to its real sum.

B

356 + 161 = 517
400 + 200 = 600

356 + 148 = 504
400 + 100 = (500)

347 + 149 = 496
300 + 100 = 400

Circle the estimated sum that is the closest to its real sum.

C

652 + 158 = 810
700 + 200 = 900

647 + 158 = 805
600 + 200 = (800)

647 + 146 = 793
600 + 100 = 700

Circle the estimated sum that is the closest to its real sum.

b. Look at the sums that gave the most precise estimates. Explain below what they have in common. You might use a number line to support your explanation.

All of the numbers we added were really close the halfway point. In the sums that gave the most precise estimates, one number always rounded up and one number always rounded down. So, they balanced each other out and gave the most precise estimate.

For example in part A, 451 + 249 = 700

451 ≈ 500   249 ≈ 200

rounded up → 500   300

451
450   250
249

400   rounded down   200
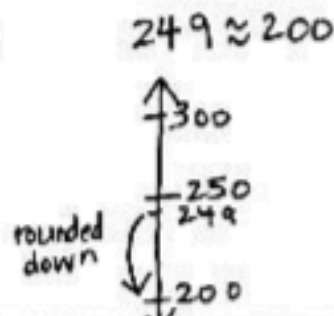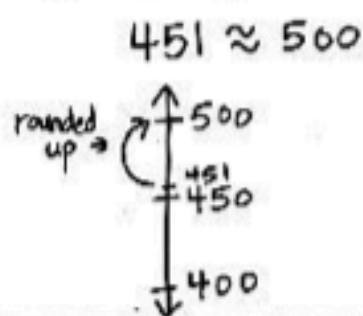
500 + 200 = 700
It gave the exact answer!!

2. Janet watches a movie that is 94 minutes long on Friday night. She watches a movie that is 151 minutes long on Saturday night.

   a. Decide how to round the minutes. Then estimate the total minutes Janet watched movies on Friday and Saturday.

   $151 \approx 150$

   $94 \approx 90$

   150 min + 90 min = 240 minutes

   I decided to round to the nearest 10 minutes and found Janet watched about 240 minutes in total.

   b. How much time does Janet actually spend watching movies?

   151 min + 94 min = 245 min.

   Janet actually spends 245 minutes watching movies.

   c. Explain whether your estimated sum is close to the actual sum. Round in a different way and see which estimate is closer.

   $151 \approx 200$

   $94 \approx 100$

   Yes, the estimated sum is close to the real sum. Rounding to the nearest ten minutes was only 5 minutes away from the real sum. But when I round to the nearest 100 the estimate is not as close to the actual sum.

3. Sadie, the bear at the zoo, weighs 182 kilograms. Her cub weighs 74 kilograms.

   a. Estimate the total weight of Sadie and her cub using whatever method you think best.
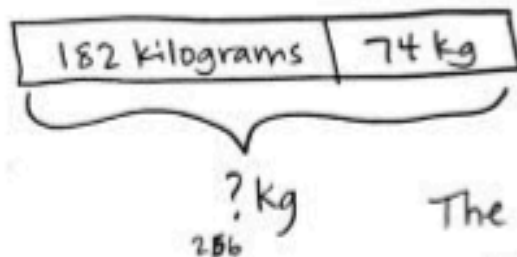
   $182 \approx 180$

   $74 \approx 70$

   180 + 70 = 250

   The total weight of Sadie and her cub is about 250 kilograms.

   b. What is the actual weight of Sadie and her cub? Model the problem with a tape diagram.

   ```
     182
   +  74
   ------
     256
   ```

   | 182 kilograms | 74 kg |

   ? kg
   256

   The actual weight of Sadie and her cub is 256 kilograms.