Grade 6 Chapter 4 Problem Bank

Answers

1. a) For example, 1670 + 126 = 1600 + 100 + 70 + 26 = 1700 + 96 = 1796
   b) For example, 1796 + 71 = 1800 + 67 = 1867
   c) For example, 1914 – 15; 1914 – 14 = 1900; 1900 – 1 = 1899
2. For example, I estimate the total collected so far is 80 000 + 120 000 = 200 000, so they have about 400 000 – 200 000 = 200 000 to go.

Problem Bank Answers (continued from p. 54)

3. For example, this magic square sums to 1434 along each row, column, and diagonal.

359	356	353	366
354	365	360	355
364	351	358	361
357	362	363	352

4. **a)** 3990, because 999, 998, 997, and 996 are the four largest different 3-digit numbers.
   b) 407, because 100, 101, 102, and 104 are the four smallest different 3-digit numbers.
5. 1986 – 1910 = 76; 1986 + 76 = 2062 + 76 = 2138 + 76 = 2214 + 76 = 2290 + 76 = 2366 + 76 =2442, so 6 times before 2500.
6. **a)** 0.75 + 2.25 = 3.00 + 6.25 = 9.75 kg – 0.25 = 9.50 kg of rice
   b) By adding various combinations of the four masses to one pan or the other, the merchant can determine the mass of any object between 0.25 kg and 10.00 kg in 0.25 kg increments. Some less obvious examples are 2.25 – 1 kg (0.75 + 0.25) = 1.25 kg; 3.00 (2.25 + 0.25) – 0.75 = 1.75 kg; 3.00 (2.25 + 0.75) – 0.25 = 2.75 kg; 6.75 – 3.25 (2.25 + 0.75 + 0.25) = 3.50 kg; 6.75 – 3.00 (2.25 + 0.75) = 3.75 kg; 7.00 (6.75 + 0.25) – 3.00 (2.25 + 0.75) = 4.00 kg; 7.50 (6.75 + 0.75) – 2.50 (2.25 + 0.25) = 5.00 kg; 7.75 (6.75 + 0.75 + 0.25) – 2.25 = 5.50 kg, and so on.
7. **a)** For example, for Vasco, Mario, Bernice, and Benjamin, it would cost 9.95 + 9.95 + 11.95 + 11.95 = $43.80.
   b) 50 – 43.80 = $6.20
8. For example, because he subtracted from a whole number and his answer ends in .475, the decimal number subtracted must end in .525 because 0.525 + 0.475 = 1. He might have entered 10 – 5.525, 6 – 2.525, 101 – 100.525, or any other whole number and a decimal number ending in .525.
9. For example, the difference between the two masses is 1.110 kg, which I divided by 2 to get 0.555 kg. So Megan should pour 0.555 kg into the 0.799 kg bag to get 1.354 kg. This will leave 1.909 – 0.555 = 1.354 kg in the first bag.
10. For example, the third stop is 10.000 – 1.200 = 8.800 km from the start. Next, I found the distance between the first and third stop: 8.800 – 3.998 = 4.802 km. I divided this distance by 2 because the second stop is in the middle of the first and third: 4.802 ÷ 2 = 2.401 km. So the second stop is 3.998 + 2.401 = 6.399 km from the start.