

Grade 6 Chapter 4 Lesson 7 Subtracting Decimals

B.

3 to 6 months	6 to 9 months	9 to 12 months
$\begin{array}{r} 6.875 \\ -5.005 \\ \hline 1.870 \text{ kg} \end{array}$	$\begin{array}{r} 7.101514 \\ 164 \\ -6.875 \\ \hline 1.289 \text{ kg} \end{array}$	$\begin{array}{r} 31211 \\ 431 \\ -8.164 \\ \hline 1.267 \text{ kg} \end{array}$

C.

3 to 6 months	6 to 9 months	9 to 12 months
$\begin{array}{r} 5.005 \\ +1.870 \\ \hline 6.875 \text{ kg} \end{array}$	$\begin{array}{r} 111 \\ 6.875 \\ +1.289 \\ \hline 8.164 \text{ kg} \end{array}$	$\begin{array}{r} 11 \\ 8.164 \\ +1.267 \\ \hline 9.431 \text{ kg} \end{array}$

D. The greatest change in mass was in the first three months.

- For example, she couldn't subtract tenths, hundredths, or thousandths because there were not enough of these in 5.005. So she regrouped 5 ones into 4 ones and 10 tenths. Then she took one of the tenths, which left 9 tenths, and regrouped it into 10 hundredths. Then she took one of the hundredths, which left 9 hundredths, and regrouped it into 10 thousandths, which she added to the thousandths place to get 15 thousandths.
 - The 4 means 4 ones, the first 9 means tenths and the second 9 hundredths, and the 15 represents thousandths.
- For example, he added 0.121 to 2.879 to make it 3, which can be easily subtracted using mental math. He had to add 0.121 to both numbers to keep the difference between them the same.
- For example, it is the same because you use the place value of the digits to subtract the numbers by regrouping. It is different because there is a decimal point and the place values are different.

4. 0 to 3 months 3 to 6 months 6 to 9 months 9 to 12 months

$\begin{array}{r} 61215 \\ -7358 \\ \hline 4567 \\ 2.791 \text{ kg} \end{array}$	$\begin{array}{r} 811 \\ -9189 \\ \hline -7358 \\ 1.831 \text{ kg} \end{array}$	$\begin{array}{r} 10818 \\ -10998 \\ \hline -9189 \\ 1.809 \text{ kg} \end{array}$	$\begin{array}{r} 191215 \\ -12035 \\ \hline -10998 \\ 1.037 \text{ kg} \end{array}$
--	---	--	--

The greatest change in mass was in the first three months.

- b)** For example, I rounded the masses to these numbers: 4.5, 7.5, 9.2, 11.0, and 12.0. Then I used mental math to find the differences as follows: 0–3 months, 3.0; 3–6 months, 1.7; 6–9 months, 1.8; 9–12 months, 1.0. All the calculations look reasonable.

5. Note: The estimates are examples.

a) Calculate:

$$\begin{array}{r} 310 \\ -40 \\ \hline -1.4 \\ 2.6 \end{array}$$

Estimate: $4 - 1.5 = 2.5$, reasonable

b) Calculate:

$$\begin{array}{r} 5915 \\ -605 \\ \hline -2.38 \\ 3.67 \end{array}$$

Estimate: $6 - 2.4 = 3.6$, reasonable

c) Calculate:

$$\begin{array}{r} 29910 \\ -3000 \\ \hline -0.537 \\ 2.463 \end{array}$$

Estimate: $3 - 0.5 = 2.5$, reasonable

d) Calculate:

$$\begin{array}{r} 510 \\ -6050 \\ \hline -0.900 \\ 5.150 \end{array}$$

Estimate $6 - 1 = 5$, reasonable

6. Note: The estimates are examples.

Blue Route

Estimate: $2 + 0.5 + 1.5 = 4$ km

Calculate:

$$\begin{array}{r} 112 \\ 1.789 \\ 0.439 \\ +1.538 \\ \hline 3.766 \text{ km} \end{array}$$

Green Route

Estimate: $0.5 + 2 + 2.5 = 5$ km

Calculate:

$$\begin{array}{r} 222 \\ 0.394 \\ 1.988 \\ +2.618 \\ \hline 5.000 \text{ km} \end{array}$$

Difference

Estimate: $5 - 3.8 = 1.2$ km

Calculate:

$$\begin{array}{r} 19910 \\ -5000 \\ \hline -3.766 \\ 1.234 \text{ km} \end{array}$$

Answers

A.

Angele	Marc
$\begin{array}{r} 49915 \\ -5005 \\ \hline -2.879 \\ 2.126 \text{ kg} \end{array}$	$\begin{array}{r} 5.126 \\ -3.000 \\ \hline 2.126 \text{ kg} \end{array}$

(Lesson 7 Answers continued on p. 85)

7. Example estimate: $12.14 - 12.13 = 0.01$ s

Calculate:
$$\begin{array}{r} ^{310}12.1\cancel{40} \\ - 12.126 \\ \hline 0.014\text{s} \end{array}$$

8. For example, I bought a hardcover book for \$29.95. My friend bought the same book in soft cover for \$10.25. How much more did I spend on the book?

$$\begin{array}{r} \$29.95 \\ - \$10.25 \\ \hline \$19.70 \text{ more} \end{array}$$