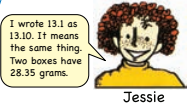
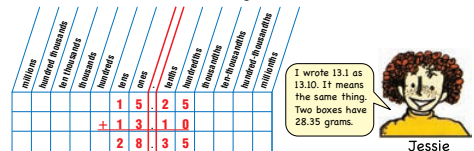


Adding and Subtracting with Larger Numbers

Jessie found two boxes of cereal. Cheery Chex has 15.25 servings. Toasty Oats has 13.1 servings.

She wanted to find the number of servings in the two boxes of cereal combined.

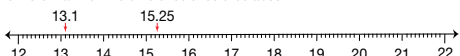


Shannon wanted to know how many more servings the box of Cheery Chex had than the box of Toasty Oats.

$$\begin{array}{r} 15.25 \text{ servings} \\ - 13.10 \text{ servings} \\ \hline 2.15 \text{ servings} \end{array}$$



Roberto said, "That seems reasonable. 15.25 is a little more than 15, and 13.10 is a little more than 13. The difference should be about 2."



1. Do you see something wrong with the way the problem below is written? Explain, and then solve the problem.

$$\begin{array}{r} 51.07 \\ + 6.394 \end{array}$$

2. Use a paper and pencil method to solve $0.487 - 0.369$.

3. Use the digits 2, 5, and 0. Arrange the decimal points to make an addition problem that results in the sums below. For example, to make a sum of 0.275, the problem is $.025 + 0.25$.

- A. 500 B. 5 C. 0.5
- D. 50 E. 0.05 F. 2.75

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Add and Subtract Decimals with Paper and Pencil (SG pp. 392–394) Questions 1–18

1.* The like place values are not aligned correctly.

It should be:

$$\begin{array}{r} 51.070 \\ + 6.394 \\ \hline \end{array}$$

Solution strategies will vary. Using expanded form:

$$\begin{aligned} 51.070 &= 50 + 1 + .0 + .07 \\ + 6.394 &= \quad 6 + .3 + .09 + .004 \\ \hline &50 + 7 + .3 + .16 + .004 = 57.464 \end{aligned}$$

See Figure 2 in the lesson for more paper and pencil strategies.

2.* Solution strategies will vary. Using compact method:

$$\begin{array}{r} 7 \text{ 11} \\ 0.48\cancel{7} \\ - 0.369 \\ \hline 0.118 \end{array}$$

See Figure 3 in the lesson for more paper and pencil strategies.

- 3. A. $250 + 250$
- B. $2.50 + 2.50$
- C. $0.25 + 0.25$ or $.250 + .250$
- D. $25.0 + 25.0$
- E. $.025 + .025$
- F. $2.50 + 0.25$

- 4. A. 1.05
- B. 1.83
- C. 1.53
- D. 17.05
- E. 0.26
- F. 0.11
- G. 0.15
- H. 0.96
- I. 0.418

- 5. About 2 bottles; .47 is about 0.5 and $.5 + .5 = 1$, so two bottles.
- 6. Estimates will vary. Possible response: about \$2.70; 0.88 is about 0.90 and $0.90 \times 3 = 2.70$
- 7. 29.5 servings; $14 + 14 = 28$; $.75 + .75 = 1.50$; $28 + 1.50 = 29.5$

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4. Find the sums or differences. Use any method you choose. Estimate to see if your answers are reasonable.

- A. $0.35 + 0.7$ B. $0.45 + 1.38$ C. $0.5 + 1.03$
- D. $4.35 + 12.7$ E. $0.88 - 0.62$ F. $0.19 - 0.08$
- G. $0.4 - 0.25$ H. $2.06 - 1.1$ I. $0.268 + 0.15$

Solve the problems using any method you choose. Show your work and include labels. Estimate to see if your answers are reasonable.



- 5. There is 0.47 of a liter in a bottle of pancake syrup. About how many bottles would it take to make 1 liter of syrup?
- 6. Jessie sees that small packages of peanut butter crackers are \$0.88. About how much would 3 packages cost?
- 7. There are 14.75 servings in a box of cereal. How many servings are in two boxes?



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*Answers and/or discussion are included in the lesson.

8. Estimates will vary. Possible response: about 75 servings
9. 55.2 grams
10. 327.5 grams
11. 60.5 grams
12. 846.5 grams
13. \$1.80
14. \$1.40
15. \$4.92
16. 706.18 grams
17. 15.01 grams
- 18.* Responses will vary. Possible response: Line up the numbers so that the decimal points are underneath each other. Then like place values will be aligned. You add or subtract all the digits in like places. For example, you add tenths to tenths, or subtract hundredths from hundredths. You place the decimal point underneath the numbers you added or subtracted, keeping it aligned with the decimal points in the problem.

8. A bottle of barbecue sauce has 25.6 servings. About how many servings are in three bottles?

9. One serving of tortilla chips is 27.6 grams. How many grams are in two servings?

10. A bag of tortilla chips has a total of 382.7 grams. How many grams will be left after the two servings from Question 9 are eaten?

11. A portion of whole-wheat flour contains 30.25 grams. A recipe calls for 2 portions. How many grams are in two portions?

12. A small bag of whole-wheat flour contains 907 grams. How much is left after the two portions from Question 11 are used?

13. Grace bought a notebook for \$1.25 and a pencil for \$0.55. How much money did she spend?


14. Tanya wants to buy a \$5.00 binder for her notes. She has \$3.60. How much more money does she need?

15. Jackie and Jessie put their money together to buy some snacks. They had \$9.57 altogether. If Jackie gave \$4.65, how much money did Jessie give?

16. There are 353.09 grams of soda in a can. How much soda will Roberto drink if he drinks two cans of soda this week?

17. A full can of soda has a mass of 368.1 grams. If there are 353.09 grams of soda in the can, how much does the empty aluminum can weigh?

18. Think of a method for adding or subtracting decimal numbers that you can use with any two numbers. Explain your method to a partner.



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Homework

1. Estimate to tell if each answer is reasonable. Explain your reasoning.

- A. $0.8 + 0.7 = .15$ B. $12.8 + 6.7 = 73.8$
 C. $15.20 + 2.50 = 17.007$ D. $3.706 - 1.597 = .2289$
 E. $0.6 + 0.06 = 0.12$ F. $1.78 - .99 = .79$
 G. $0.07 + 0.004 = 0.074$ H. $0.01 + 0.10 = 0.0110$

2. Solve the problems. Estimate to see if your answers are reasonable.

- A.
$$\begin{array}{r} 0.12 \\ + 2.33 \\ \hline \end{array}$$
 B.
$$\begin{array}{r} 1.49 \\ - 1.08 \\ \hline \end{array}$$

 C. $3.1 + 0.13$ D. $1.05 + .50$
 E. $0.379 + 0.347$ F. $80.23 - 22.58$
 G. $13.89 - 5.53$ H. $1.7 + 8.62$
 I. $0.9 - 0.64$ J. $1.3 + 0.678$
 K. $42.34 + 87.9$ L. $1.03 - 0.99$

3. Use $<$, $>$, or $=$ to make the number sentences true.

- A. $0.2 + 2.2$ $2.2 + .002$
 B. $0.25 + 0.25$ $0.025 + 2$
 C. $0.025 + 0.025$ $.0250 + .0250$
 D. $2.25 + .025$ $2.25 + .200$
 E. $0.025 + 0.10$ $0.2 + 0.1$

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Homework (SG p. 395)

Questions 1–3

1. A. reasonable
 B. unreasonable; 12 wholes + 6 wholes is 18 wholes, not 73.
 C. unreasonable; two-tenths and five-tenths is 0.7 not .007
 D. unreasonable; the difference should be about 2, not .2.
 E. unreasonable; $0.6 + 0.6 = 0.12$, but only 0.06 was added, so the sum should be less or a little more than 0.6.
 F. reasonable
 G. reasonable
 H. unreasonable; If I just look at the tenths, the sum should be at least one-tenth.
2. A. 2.45 B. 0.41
 C. 3.23 D. 1.55
 E. 0.726 F. 57.65
 G. 8.36 H. 10.32
 I. 0.26 J. 1.978
 K. 130.24 L. 0.04
3. A. $0.2 + 2.2$ $2.2 + .002$
 B. $0.25 + 0.25$ $0.025 + 2$
 C. $0.025 + 0.025$ $.0250 + .0250$
 D. $2.25 + .025$ $2.25 + .200$
 E. $0.025 + 0.10$ $0.2 + 0.1$

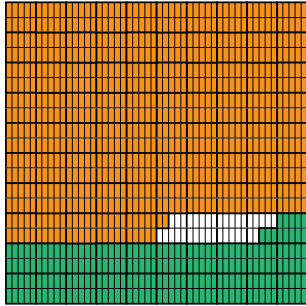
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Teacher Guide

**Add and Subtract Decimals Quiz
(TG pp. 1–2)
Questions 1–3**

1. Solution strategies will vary.
A. Using a grid:



Number sentence $.752 + .213 = .965$

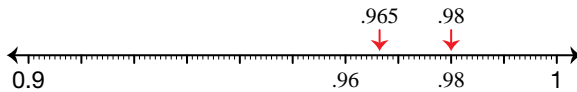
- B. Using expanded form to solve $6.46 - 5.51$:

$$6.49 = 6 + 0.4 + 0.09 = 5 + 1.4 + 0.09$$

$$5.51 = 5 + 0.5 + 0.01 = 5 + 0.5 + 0.01$$

$$0 + .9 + 0.08 = .98$$

- C. 0.98;

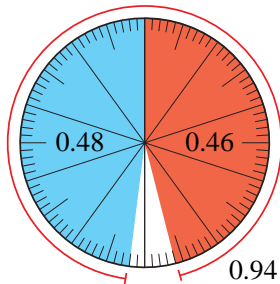


2. Solution strategies will vary.

A. Using compact method:

$$\begin{array}{r} 7.16 \\ 2.86 \\ - 1.79 \\ \hline 1.07 \end{array}$$

- B. Using hundredths circle:



- C. Representations will vary. Using base-ten shorthand:



- D. Mark's; Possible response: I know .94 is closer to 1 than 1.07 because 1.07 is .07 more than 1 and .94 is .06 less than 1.

3. Frank is incorrect. Possible response: If I just look at the tenths, $0.9 - 0.8 = 0.1$, not 1.0.

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Name _____ Date _____

Add and Subtract Decimals Quiz

1. Shannon and Roberto played the *Add or Subtract to 1 Game*.

A. Shannon made this problem: $.752 + .213$
Show how to find Shannon's sum:

B. Roberto made this problem: $6.49 - 5.51$
Show how to find Roberto's difference:

Number sentence _____

Number sentence _____

C. Place both answers on the number line below.

Which number is closer to 1? _____

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Name _____ Date _____

2. Jessie and Mark played the game, too.

A. Jessie made this problem: $2.86 - 1.79$
Show how to find Jessie's difference:

B. Mark made this problem: $0.48 + 0.46$
Show how to find Mark's sum:

C. Represent Mark's answer using a hundredths grid, hundredths circle, or base-ten shorthand. The flat is the unit whole. Choose one way.

D. Which number is closer to 1, Jessie's or Mark's? _____
How do you know?

3. Frank made this problem:

$$\begin{array}{r} .911 \\ - .809 \\ \hline \end{array}$$

He estimated the difference to be about 1. Do you agree or disagree? Explain why.

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