NAME   DATE   PERIOD
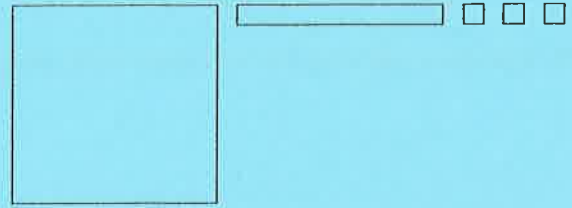
Unit 5, Lesson 3: Adding and Subtracting Decimals with Few Non-Zero Digits

1. Here is a base-ten diagram that represents 1.13. Use the diagram to find $1.13 - 0.46$.

   Explain how you found the difference,
   or label your diagram to show your
   steps.

2. Compute the following sums. If you get stuck, you can draw base-ten diagrams.

   a. $0.027 + 0.004$ b. $0.203 + 0.1$ c. $1.2 + 0.145$

3. A student said we cannot subtract 1.97 from 20 because 1.97 has two decimal digits and 20 has none. Do you agree with his statement? Explain or show your reasoning.

4. Decide which calculation shows the correct way to find $0.3 - 0.006$ and explain your reasoning.

A	B	C	D
0.3	0.3	0.3 0	0.3 0 0
− 0.0 0 6	− 0.0 0 6	− 0.0 0 6	− 0.0 0 6
0.3 0 6	0.0 9 7	0.0 2 4	0.2 9 4

5. Complete the calculations so that each shows the correct difference.

   a.
   ```
       1 4 2 . 6
   −         1 . 4
   ─────────────────
   [ ][ ][ ][ ] . 2
   ```

   b.
   ```
       3 8 . 6 0
   −      6 . 7 5
   ─────────────────
   [ ][ ][ ] . [ ] 5
   ```

   c.
   ```
      2 4 1 . 7 6
   −        2 . 1 8
   ─────────────────
   [ ][ ][ ][ ] . [ ] 8
   ```

6. The school store sells pencils for $0.30 each, hats for $14.50 each, and binders for $3.20 each. Elena would like to buy 3 pencils, a hat, and 2 binders. She estimated that the cost will be less than $20.

    a. Do you agree with her estimate? Explain your reasoning.

    b. Estimate the number of pencils could she buy with $5. Explain or show your reasoning.

(from Unit 5, Lesson 1)

7. A rectangular prism measures $7\frac{1}{2}$ cm by 12 cm by $15\frac{1}{2}$ cm.

    a. Calculate the number of cubes with edge length $\frac{1}{2}$ cm that fit in this prism.

    b. What is the volume of the prism in cm^3? Show your reasoning. If you are stuck, think about how many cubes with $\frac{1}{2}$-cm edge lengths fit into $1\ cm^3$.

(from Unit 4, Lesson 15)

8. At a constant speed, a car travels 75 miles in 60 minutes. How far does the car travel in 18 minutes? If you get stuck, consider using the table.

minutes	distance in miles
60	75
6	
18	

(from Unit 2, Lesson 12)

Unit 5, Lesson 4: Adding and Subtracting Decimals with Many Non-Zero Digits

1. For each subtraction problem, circle the correct calculation.

a. $7.2 - 3.67$

b. $16 - 1.4$

a.

```
    7 . 2          0 7 . 2          7 . 2 0
  - 3 . 6 7      - 3 . 6 7        - 3 . 6 7
  ─────────      ─────────        ─────────
    3 . 0 5        3 . 0 5          3 . 5 3
```

b.

```
      1 6          1 6 . 0          1 6 . 0
  -   1 . 4      - 1 . 4 0        -   1 . 4
  ─────────      ─────────        ─────────
    0 . 2          0 . 2 0          1 4 . 6
```

2. Explain how you could find the difference of 1 and 0.1978.

3. A bag of chocolates is labeled to contain 0.384 pound of chocolates. The actual weight of the chocolates is 0.3798 pound.

a. Are the chocolates heavier or lighter than the weight stated on the label? Explain how you know.

b. How much heavier or lighter are the chocolates than stated on the label? Show your reasoning.

4. Complete the calculations so that each shows the correct sum.

a.

```
    1 . 0 3 6
  + [ ][ ][ ][ ]
  ─────────────
    4
```

b.

```
    0 . 7 3 8
  + [ ][ ][ ]
  ───────────
    1
```

c.

```
    0 . 5 1 3 7
  + [ ][ ][ ][ ][ ]
  ─────────────────
    1
```

5. A shipping company is loading cube-shaped crates into a larger cube-shaped container. The smaller cubes have side lengths of $2\frac{1}{2}$ feet, and the larger shipping container has side lengths of 10 feet. How many crates will fit in the large shipping container? Explain your reasoning.

(from Unit 4, Lesson 14)

6. For every 9 customers, the chef prepares 2 loaves of bread. Here is double number line showing varying numbers of customers and the loaves prepared.

number of customers

loaves of bread
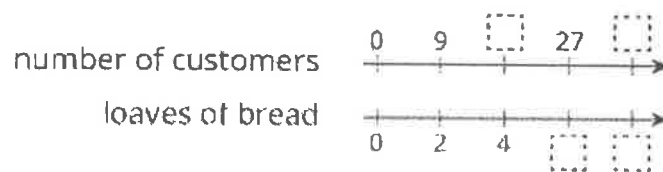
a. Complete the missing information.

b. The same information is shown on a table. Complete the missing information.

customers	loaves
9	2
	4
27	
	14
1	

c. Use either representation to answer these questions.

- How many loaves are needed for 63 customers?

- How many customers are there if the chef prepares 20 loaves?

- How much of a loaf is prepared for each customer?

(from Unit 2, Lesson 13)

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Unit 5, Lesson 6: Methods for Multiplying Decimals

1. Find each product. Show your reasoning.

   a. $(1.2) \cdot (0.11)$

   b. $(0.34) \cdot (0.02)$

   c. $120 \cdot (0.002)$

2. You can use a rectangle to represent $(0.3) \cdot (0.5)$.

   a. What must the side length of each square represent for the rectangle
      to correctly represent $(0.3) \cdot (0.5)$?

   b. What area is represented by each square?

   c. What is $(0.3) \cdot (0.5)$? Show your reasoning.

3. One gallon of gasoline in Buffalo, New York costs $2.29. In Toronto, Canada, one liter of gasoline costs
   $0.91. There are 3.8 liters in one gallon.

   a. How much does one gallon of gas cost in   b. Is the cost of gas greater in Buffalo or in
      Toronto? Round your answer to the nearest   Toronto? How much greater?
      cent.

4. Calculate each sum or difference.
   a. $10.3 + 3.7$ b. $20.99 - 4.97$ c. $15.99 + 23.51$ d. $1.893 - 0.353$
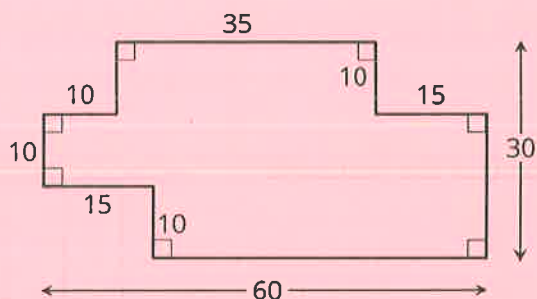
(from Unit 5, Lesson 2)

5. Find the value of $\frac{49}{50} \div \frac{7}{6}$ using any method.

(from Unit 4, Lesson 11)

6. Find the area of the shaded region. All angles are right angles. Show your reasoning.

(from Unit 1, Lesson 1)

7.   a. Priya finds $(1.05) \cdot (2.8)$ by calculating $105 \cdot 28$, then moving the decimal point three places to the left. Why does Priya's method make sense?

   b. Use Priya's method to calculate $(1.05) \cdot (2.8)$. You can use the fact that $105 \cdot 28 = 2,940$.

   c. Use Priya's method to calculate $(0.0015) \cdot (0.024)$.

Unit 5, Lesson 5: Decimal Points in Products

1. a. Find the product of each number and $\frac{1}{100}$.

    122.1   11.8   1350.1   1.704

    b. What happens to the decimal point of the original number when you multiply it by $\frac{1}{100}$? Why do you think that is? Explain your reasoning.

2. Which expression has the same value as $(0.06) \cdot (0.154)$? Select **all** that apply.

    A. $6 \cdot \frac{1}{100} \cdot 154 \cdot \frac{1}{1,000}$
    B. $6 \cdot 154 \cdot \frac{1}{100,000}$
    C. $6 \cdot (0.1) \cdot 154 \cdot (0.01)$
    D. $6 \cdot 154 \cdot (0.00001)$
    E. 0.00924

3. Calculate the value of each expression by writing the decimal factors as fractions, then writing their product as a decimal. Show your reasoning.

    a. $(0.01) \cdot (0.02)$

    b. $(0.3) \cdot (0.2)$

    c. $(1.2) \cdot 5$

    d. $(0.9) \cdot (1.1)$

    e. $(1.5) \cdot 2$

4. Write three numerical expressions that are equivalent to $(0.0004) \cdot (0.005)$.

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5. Calculate each sum.

   a. $33.1 + 1.95$ b. $1.075 + 27.105$ c. $0.401 + 9.28$

   (from Unit 5, Lesson 3)
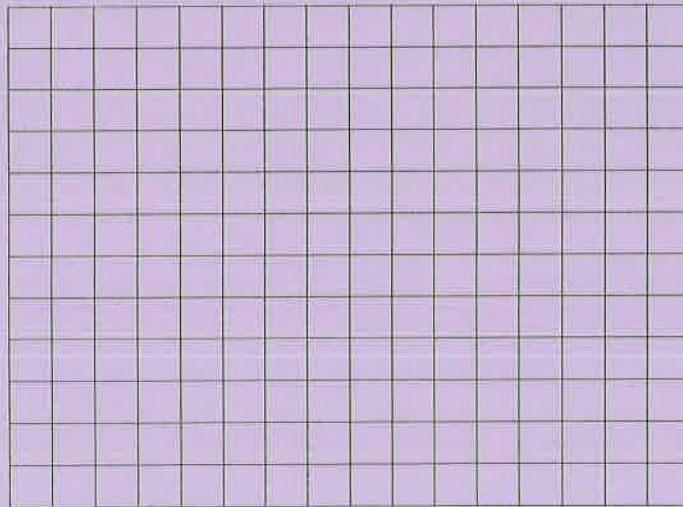
6. Calculate each difference. Show your reasoning.

   a. $13.2 - 1.78$ b. $23.11 - 0.376$ c. $0.9 - 0.245$

   (from Unit 5, Lesson 4)

7. On the grid, draw a quadrilateral *that is not a rectangle* that has an area of 18 square units. Show how you know the area is 18 square units.

   (from Unit 1, Lesson 3)