

SECURE MATERIAL - Reader Name: _____
Tennessee Comprehensive Assessment Program

TCAP/CRA

2014



5

Phase III

Found Treasure Task

Anchor Set

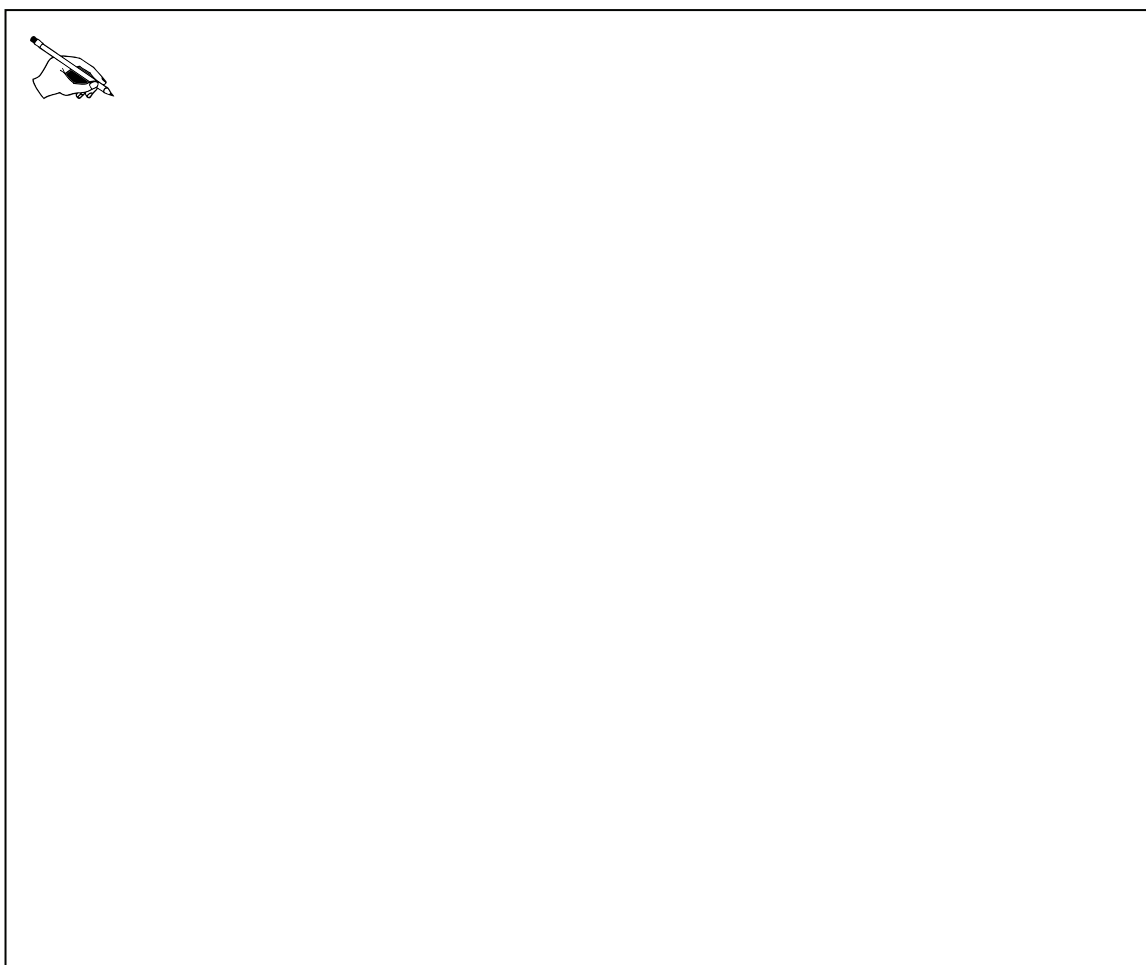
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Grade 5 — 2013–14, Phase III
Part 2: Constructed Response Task Section

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya’s good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya’s best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.




**Grade 5 — 2013–14, Phase II, Stage 2 Pilot
Constructed Response Assessment**

Found Treasure Task


The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.



A large rectangular box for writing the answer to question b. In the top-left corner, there is a small icon of a hand holding a pen, indicating where to start writing.

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.



A large rectangular box for writing the answer to question c. In the top-left corner, there is a small icon of a hand holding a pen, indicating where to start writing.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.



A large rectangular box for writing the answer to question d. In the top-left corner, there is a small icon of a hand holding a pen, indicating where to start writing.



Scoring Guide

The CCSS for Mathematical Content (2 points)

- 5.NF.B.4 Calculates $\frac{1}{16}$ of 3200 as 200 for part b, $\frac{1}{8}$ of 3200 as 400 for part c, and $\frac{1}{4}$ of 3200 as 800 for part d. _____
(1 Point)
- 5.NF.A.1 Writes and accurately solves a subtraction equation using fractions with unlike denominators (equation does not need to correctly model the situation). _____
(1 Point)

The CCSS for Mathematical Practice (2 points)

- MP1 Shows that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya, and that each of three friends receives $\frac{1}{16}$ of the treasure for a total of $\frac{3}{16}$. _____
(1 Point)
(MP1: Make sense of problems and persevere in solving them.)
- MP4 Represents part a with an area model, number line, or other diagram. _____
(1 Point)
(MP4: Model with mathematics.)

TOTAL POINTS: 4

The CCSS for Mathematical Content Addressed In This Task

Use equivalent fractions as a strategy to add and subtract fractions.

5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)*

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

The CCSS for Mathematical Practice*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.


* Gray type indicates Mathematical Practices not addressed in this assessment.

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure. \rightarrow 16 total
- Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure. \rightarrow $\frac{2}{16}$
- Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure. \rightarrow $\frac{4}{16}$
- Sonya keeps the rest of the treasure.

a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

 She keeps $\frac{7}{16}$ of the treasure for herself. 16 total pieces. James, Beth, & Tyree receive 3 pieces total. Maria gets $\frac{1}{8}$, or 2 pieces. Desiree gets $\frac{1}{4}$, or 4 pieces. So $16 - 3 - 2 - 4 = 7$. Sonya gets $\frac{7}{16}$.

$\frac{1}{16} \rightarrow \frac{1}{16} \cdot 3 = \frac{3}{16}$ $\frac{16}{16} - \frac{3}{16} - \frac{2}{16} - \frac{4}{16} = \frac{7}{16}$
 $\frac{1}{8} \rightarrow \frac{2}{16}$
 $\frac{1}{4} \rightarrow \frac{4}{16}$

J	B	T	M	M	D	D	D
D	S	S	S	S	S	S	S


Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

$$\frac{1}{16} \cdot \frac{3200}{1} =$$


$$\frac{3200}{16} = 200$$

 They each get $\frac{1}{16}$ of the total treasure, and the treasure is \$3200 total, so they would get $\frac{1}{16}$ of \$3200, which would be \$200. They would get \$200 worth of treasure.

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

$$\frac{1}{8} \cdot \frac{3200}{1} =$$


$$\frac{3200}{8} = 400$$

 Since $\frac{1}{8}$ is twice as much as $\frac{1}{16}$, she would receive twice as much money as James, Beth, or Tyree. So she would get \$400, because $\frac{1}{8}$ of 3200 is 400.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

$$\frac{1}{4} \cdot \frac{3200}{1} =$$

$$\frac{3200}{4} = 800$$

 Because $\frac{1}{4}$ is twice as much as $\frac{1}{8}$, and 4 times as much as $\frac{1}{16}$, she would receive 4 times as much money as James / Beth / Tyree and 2 times as much as Maria. So she would get \$800.

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
- Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
- Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
- Sonya keeps the rest of the treasure.

- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

$\frac{1}{4} \times 4 = \frac{4}{16}$ $\frac{1}{8} \times 2 = \frac{2}{16}$

$\frac{1}{16} + \frac{1}{16} + \frac{1}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}$

I found the LCD $\frac{16}{16} - \frac{9}{16} = \frac{7}{16}$
 (Least Common Denominator)
 for each of my fractions. The LCD was 16.


Sonya gets $\frac{7}{16}$ of the treasure.

Diagram: A bar model divided into 16 equal vertical sections. The top three sections are shaded and labeled "James", "Beth", and "Tyree". The next two sections are shaded and labeled "Maria". The next four sections are shaded and labeled "Desiree". The remaining seven sections are unshaded.

Found Treasure Task

The treasure's value is \$3200.


- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

 I used 16 because it was the LCD of each of their parts.

$$\begin{array}{r} 0200 \\ 16 \overline{) 3200} \\ \underline{-32} \\ 00 \\ \underline{-00} \\ 00 \\ \underline{-00} \\ 00 \end{array}$$

\$200 EACH


- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

 I used the answer to the division... problem above. I multiplied by 2 because she got $\frac{2}{16}$ of the treasure

$$200 \times 2 = \$400$$

Maria got \$400.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

 I use the information above.

$$\frac{4}{16}$$

$200 \times 4 = 800$

Desiree receives \$800.

Anchor 2

Litho 02205200183

Total Content Points: 2 (5.NF.A.1, 5.NF.B.4)

Total Practice Points: 2 (MP1, MP4)

In Part A, the student correctly adds the fractions of the treasure given to Sonya's friends by replacing all fractions with equivalent fractions with like denominators

$\left(\frac{1}{16} + \frac{1}{16} + \frac{1}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}\right)$; the student then accurately subtracts that total from $\frac{16}{16}$ to find

the fractional amount that Sonya keeps $\left(\frac{16}{16} - \frac{9}{16} = \frac{7}{16}\right)$ (5.NF.A.1). The student correctly

calculates $\frac{1}{16}$ of 3200 (\$200) in Part B, $\frac{1}{8}$ of 3200 (\$400) in Part C, and $\frac{1}{4}$ of 3200 (\$800) in

Part D (5.NF.B.4). The student correctly shows that each of three friends receives $\frac{1}{16}$ of the

treasure $\left(\frac{1}{16} + \frac{1}{16} + \frac{1}{16}\right)$, and that the amount given away must be subtracted from 1 whole

$\left(\frac{16}{16}\right)$ to determine the fractional amount left for Sonya (MP1). In Part A, the student accurately

represents the fractional parts of the treasure that each person receives with a labeled diagram divided into sixteenths (MP4).

Total Awarded Points: 4 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

transfer to 16ths

$\frac{1}{8} = \frac{2}{16}$

$\frac{1}{4} = \frac{4}{16}$

$\frac{1}{16} + \frac{1}{16} + \frac{1}{16} = \frac{3}{16}$ for the 3 friends

$\frac{2}{16} + \frac{4}{16} + \frac{3}{16} = \frac{9}{16}$ - treasure given

James, Beth and Tyree

Desiree

how much was given away

$\frac{16}{16} - \frac{9}{16} = \frac{7}{16}$

the entire treasure

how much Sonya kept

Bar Model Diagram:


A horizontal bar is divided into 16 equal vertical segments. The segments are labeled as follows:

- 1 segment: James
- 2 segments: Beth
- 1 segment: Maria
- 3 segments: Tyree
- 1 segment: Desiree
- 7 segments: Sonya

Found Treasure Task

The treasure's value is \$3200.


- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

 $\frac{1}{16}$ of \$3200 - total value

how much each of them got \parallel $\frac{1}{16} \cdot 3200 = \200 $\frac{1}{16}$ of the treasure, or what each friend got.

\$200


- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

 $\frac{2}{16}$ of \$3200 - total amount

Maria's pay-share $\frac{2}{16} \cdot 3200 = \400 $\frac{2}{16}$ of the treasure, or what Maria received.

\$400

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

 $\frac{4}{16}$ of 3200 - total amount

Desiree's share $\frac{4}{16} \cdot 3200 = \800 $\frac{4}{16}$ of the treasure, or what Desiree received

\$800

Anchor 3

Litho 00135200178

Total Content Points: 2 (5.NF.A.1, 5.NF.B.4)

Total Practice Points: 1 (MP1)

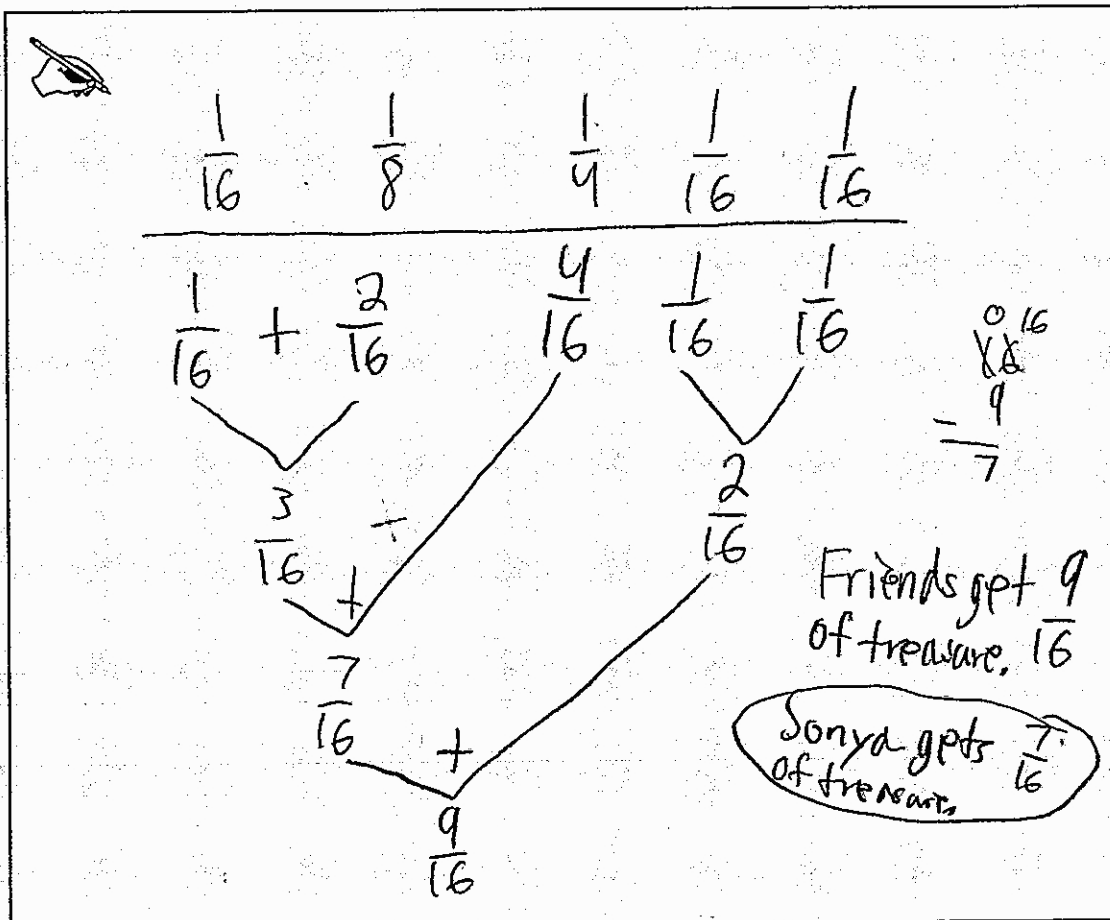
In Part A, the student correctly adds the fraction of the treasure given to Sonya's friends by replacing all fractions with equivalent fractions with like denominators $\left(\frac{3}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}\right)$; the student then accurately subtracts that total from $\frac{16}{16}$ to find the fractional amount that Sonya keeps $\left(\frac{16}{16} - \frac{9}{16} = \frac{7}{16}\right)$ (5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (\$200) in Part B, $\frac{1}{8}$ of 3200 (\$400) in Part C, and $\frac{1}{4}$ of 3200 (\$800) in Part D (5.NF.B.4). The student correctly shows that the amounts given away must be subtracted from 1 whole $\left(\frac{16}{16}\right)$ to determine the fractional amount left for Sonya, and shows that each of three friends receives $\frac{1}{16}$ of the treasure $\left(\frac{1}{16} \times 3 = \frac{3}{16}\right)$ (MP1). In Part A, the diagram representing the fractional parts of the treasure that each person receives is an inaccurate model because it is divided into fifteenths instead of sixteenths (no credit for MP4).

Total Awarded Points: 3 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.


- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.



Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.


 They each receive \$200.

$$\frac{1}{16} \times \frac{3200}{1} = \frac{3200}{16}$$

$$\begin{array}{r} 16 \\ \times 20 \\ \hline 00 \\ + 320 \\ \hline 320 \end{array}$$

$$\begin{array}{r} 200 \\ \times 16 \\ \hline 1200 \\ + 2000 \\ \hline 3200 \end{array}$$

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.




$$\frac{2}{16} \times \frac{3200}{1} = \frac{6400}{16}$$

$$\begin{array}{r} 400 \\ \times 16 \\ \hline 2400 \\ + 4000 \\ \hline 6400 \end{array}$$

She gets \$400.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.



$$\frac{4}{16} \times \frac{3200}{1} = \frac{12800}{16}$$

$$\begin{array}{r} 800 \\ \times 16 \\ \hline 4800 \\ + 8000 \\ \hline 12800 \end{array}$$

She gets \$800.

Anchor 4

Litho 00395200183

Total Content Points: 2 (5.NF.A.1, 5.NF.B.4)

Total Practice Points: 1 (MP1)

In Part A, the student correctly adds the fractions of the treasure given to Sonya's friends by

replacing all fractions with equivalent fractions with like denominators $\left(\frac{1}{16}, \frac{2}{16}, \frac{4}{16}, \frac{1}{16}, \frac{1}{16}\right)$; the

student then subtracts the numerator of the sum $\frac{9}{16}$ from the numerator of $\frac{16}{16}$, indicating that

“Sonya gets $\frac{7}{16}$ of treasure” (5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (\$200) in

Part B, $\frac{1}{8}$ of 3200 (\$400) in Part C, and $\frac{1}{4}$ of 3200 (\$800) in Part D (5.NF.B.4). The student

demonstrates that the amounts given away must be subtracted from 1 whole to determine the

fractional amount left for Sonya $\left(\frac{7}{16}\right)$, and the student shows that each of three friends receives

$\frac{1}{16}$ of the treasure $\left(\frac{1}{16}, \frac{1}{16}, \frac{1}{16}\right)$ (MP1). In Part A, the student does not provide a model to

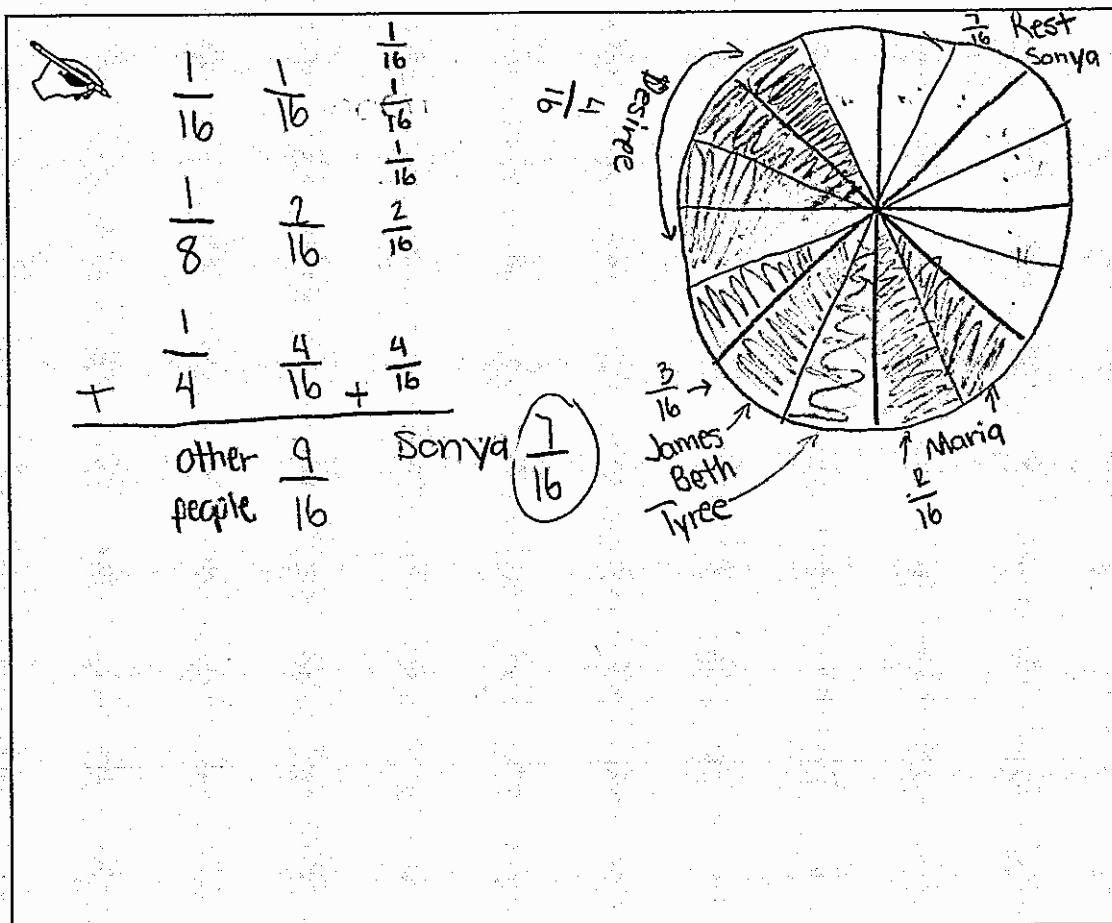
represent the fractional parts of the treasure that each person receives (no credit for MP4).

Total Awarded Points: 3 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

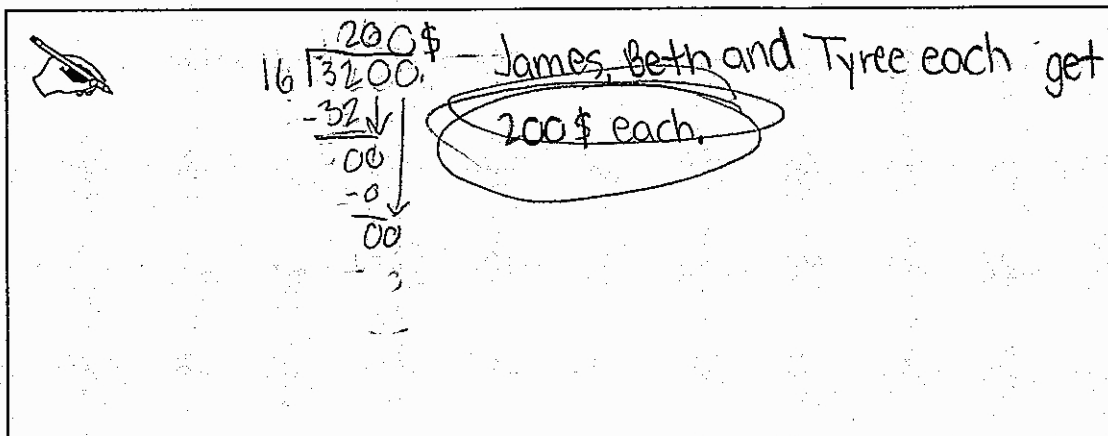
- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.



Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

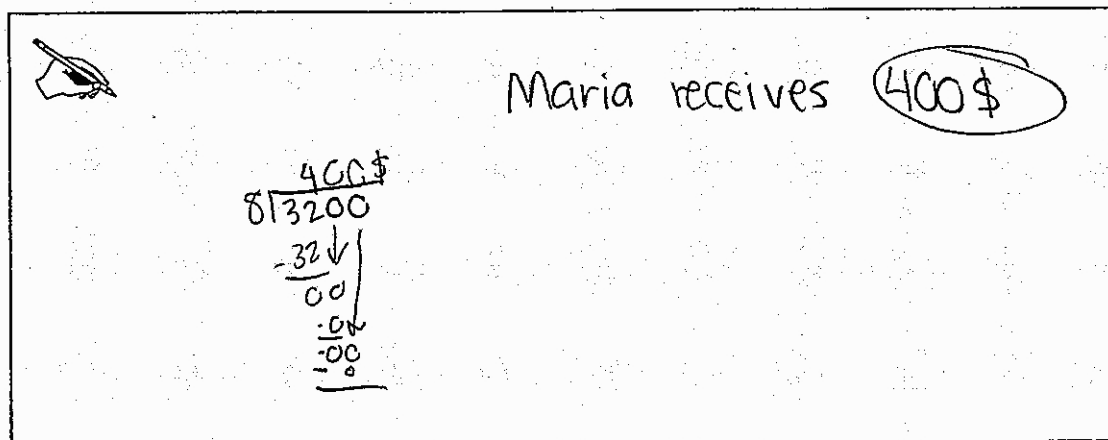


Handwritten solution for part b:

$$\begin{array}{r}
 200\$ \\
 16 \overline{) 3200} \\
 \underline{-32} \\
 00 \\
 \underline{-0} \\
 00 \\
 \underline{-0} \\
 0
 \end{array}$$

James, Beth and Tyree each get 200\$ each.

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

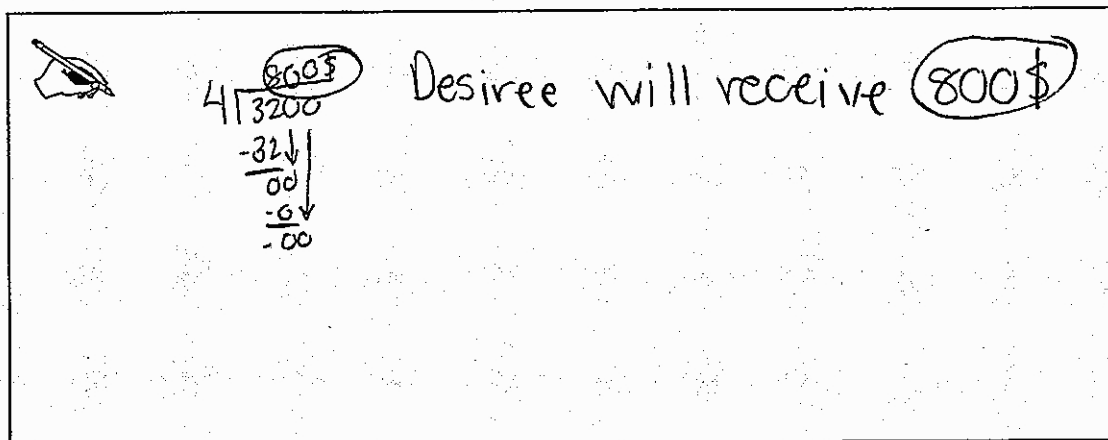


Handwritten solution for part c:

$$\begin{array}{r}
 400\$ \\
 8 \overline{) 3200} \\
 \underline{-32} \\
 00 \\
 \underline{-0} \\
 00 \\
 \underline{-0} \\
 0
 \end{array}$$

Maria receives 400\$

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.



Handwritten solution for part d:

$$\begin{array}{r}
 800\$ \\
 4 \overline{) 3200} \\
 \underline{-32} \\
 00 \\
 \underline{-0} \\
 00 \\
 \underline{-0} \\
 0
 \end{array}$$

Desiree will receive 800\$

Anchor 5

Litho 00335200183

Total Content Points: 1 (5.NF.B.4)

Total Practice Points: 2 (MP1, MP4)

In Part A, although the student correctly adds the fractions of the treasure given to Sonya's friends by replacing all fractions with equivalent fractions with like denominators

$\left(\frac{1}{16} + \frac{1}{16} + \frac{1}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}\right)$, by neither writing nor solving a subtraction equation to find the

fractional amount that Sonya keeps, the student does not show the final step in the process of

solving the problem (no credit for 5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (200\$)

in Part B, $\frac{1}{8}$ of 3200 (400\$) in Part C, and $\frac{1}{4}$ of 3200 (800\$) in Part D (5.NF.B.4). In Part A, the

student accurately represents the fractional parts of the treasure that each person receives with a

labeled diagram divided into sixteenths (MP4). The diagram indicates that the amounts given

away must be subtracted from 1 whole to determine the fractional amount left for Sonya $\left(\frac{7}{16}\right)$,

and the student shows that each of three friends receives $\frac{1}{16}$ of the treasure for a total of $\frac{3}{16}$

(MP1).
Total Awarded Points: 3 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
- Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
- Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
- Sonya keeps the rest of the treasure.

a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

①

16 (16, 32, 48, 64, 80)
 8 (8, 16, 24, 32, 40)
 4 (4, 8, 12, 16, 20)
 LCM = 16

②

$\frac{1 \times 1}{16 \times 1} = \frac{1}{16}$	$\frac{1}{16} \cdot 3 = \frac{3}{16}$
$\frac{1 \times 2}{8 \times 2} = \frac{2}{16}$	$\frac{2}{16} \cdot 1 = \frac{2}{16}$
$\frac{1 \times 4}{4 \times 4} = \frac{4}{16}$	$\frac{4}{16} \cdot 1 = \frac{4}{16}$

③ $\frac{3}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}$

④

16
16
- 9
16
7
16

⑤

James			
Beth		Desiree	
Tyree			Sonya
	Maria		

Sonya keeps $\frac{7}{16}$ of the treasure. (.43 or 43%)

Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

Handwritten work for problem b:

$$\begin{array}{r} 3 \\ 16 \overline{) 3200} \\ \underline{01875} \\ 16125 \\ \underline{13400} \\ 2720 \\ \underline{2560} \\ 160 \\ \underline{150} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

Handwritten work for problem b (continued):

$$\begin{array}{r} 0.1875 \\ 3175 \times 0.1875 \\ \underline{600} \\ 600 \end{array}$$

Handwritten work for problem b (continued):

They each get \$625.

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

Handwritten work for problem c:

$$1 \div 8 = .125$$

Handwritten work for problem c (continued):

Maria receives \$125.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

Handwritten work for problem d:

$$1 \div 4 = .25$$

Handwritten work for problem d (continued):

Desiree receives \$250.

Anchor 6

Litho 01295200183

Total Content Points: 1 (5.NF.A.1)

Total Practice Points: 1 (MP1)

In Part A, the student correctly adds the fractions of the treasure given to Sonya's friends by replacing all fractions with equivalent fractions with like denominators $\left(\frac{3}{16} + \frac{2}{16} + \frac{4}{16} = \frac{9}{16}\right)$;

the student then accurately subtracts that total from $\frac{16}{16}$ to find the fractional amount that Sonya

keeps $\left(\frac{16}{16} - \frac{9}{16} = \frac{7}{16}\right)$ (5.NF.A.1). The student incorrectly calculates $\frac{1}{16}$ of 3200 (\$625) in

Part B, $\frac{1}{8}$ of 3200 (\$125) in Part C, and $\frac{1}{4}$ of 3200 (\$25) in Part D (no credit for 5.NF.B.4). The

student correctly shows that the amounts given away must be subtracted from 1 whole $\left(\frac{16}{16}\right)$ to

determine the fractional amount left for Sonya, and shows that each of three friends receives $\frac{1}{16}$

of the treasure for a total of $\frac{3}{16}$ (MP1). In Part A, the diagram representing the fractional parts of

the treasure that each person receives is an attempt to represent the total treasure divided into the fractions each person receives; however, some of the lines are partially erased and some are erased completely, making the diagram difficult to interpret clearly (no credit for MP4).

Total Awarded Points: 2 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.


$\frac{16}{16} - \frac{1}{4}$
 $\frac{16}{16} - \frac{4}{16} = \frac{12}{16} - \frac{1}{8}$
 $\frac{12}{16} - \frac{2}{16} = \frac{10}{16} - \frac{1}{16} = \frac{9}{16}$

Sonya keeps $\frac{9}{16}$ of the buried treasure

Found Treasure Task

The treasure's value is \$3200.


- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.



$$\begin{array}{r} 200 \\ 16 \overline{)3200} \\ \underline{-32} \\ 000 \end{array}$$

They each receive \$200.


- c. How much of the treasure's value does Maria receive? Label your answer in dollars.



$$\begin{array}{r} 400 \\ 8 \overline{)3200} \\ \underline{-32} \\ 000 \end{array}$$

She receives \$400.

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.



$$\begin{array}{r} 800 \\ 4 \overline{)3200} \\ \underline{-32} \\ 000 \end{array}$$

She receives \$800.

Anchor 7

Litho 00095200183

Total Content Points: 2 (5.NF.A.1, 5.NF.B.4)

Total Practice Points: 0

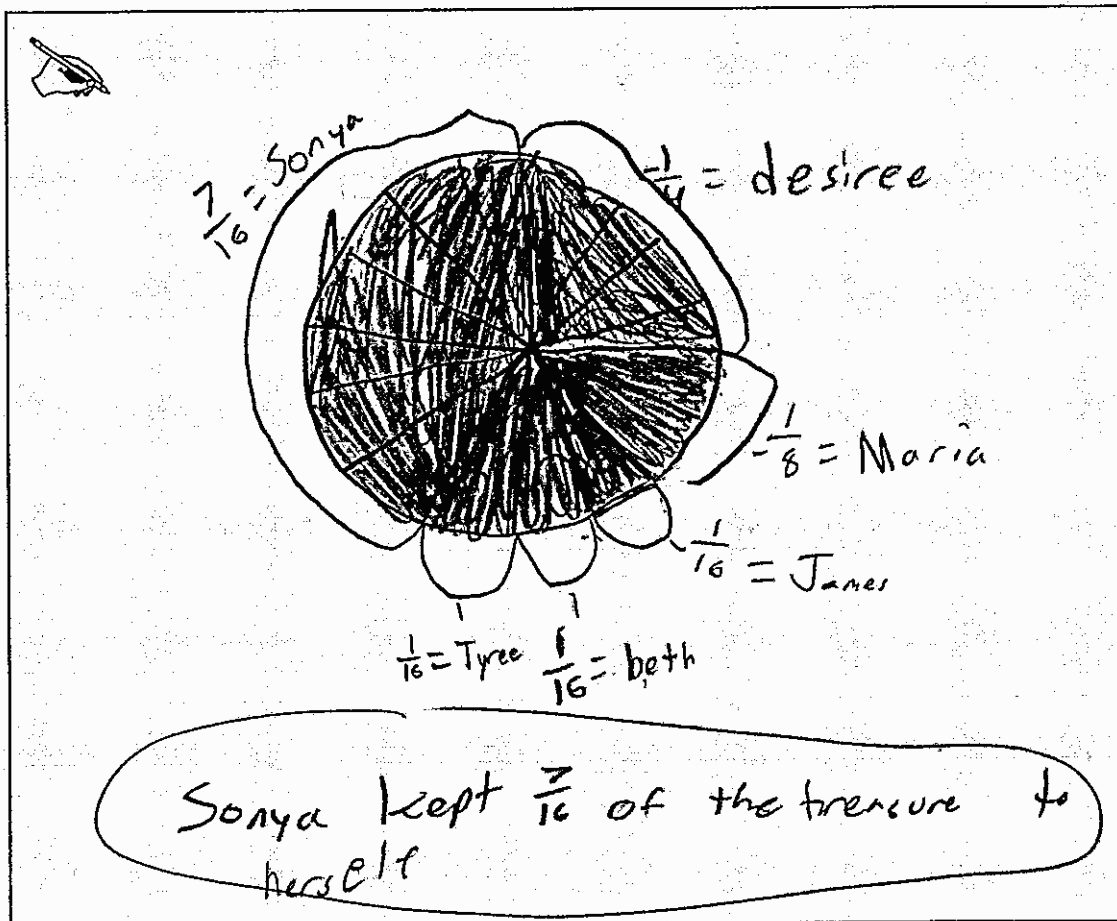
In Part A, although the equation does not correctly model the situation, the student writes and accurately solves a subtraction equation using fractions with unlike denominators by replacing all fractions with equivalent fractions with like denominators $\left(\frac{10}{16} - \frac{1}{16} = \frac{9}{16}\right)$ (5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (\$200) in Part B, $\frac{1}{8}$ of 3200 (\$400) in Part C, and $\frac{1}{4}$ of 3200 (\$800) in Part D (5.NF.B.4). The student neither shows that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya nor indicates that each of three friends receives $\frac{1}{16}$ of the treasure, instead using $\frac{1}{16}$ for one friend (no credit for MP1). In Part A, the student does not provide a model to represent the fractional parts of the treasure that each person receives (no credit for MP4).

Total Awarded Points: 2 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

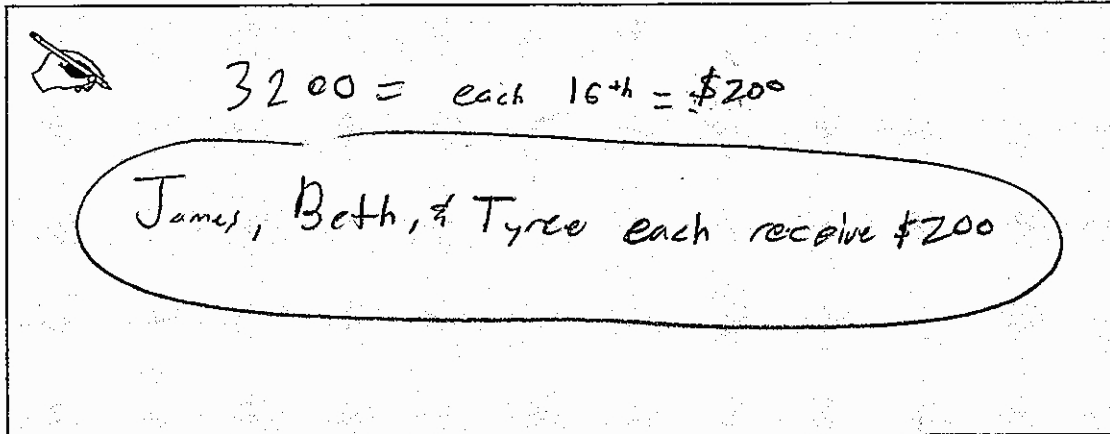
- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.



Found Treasure Task

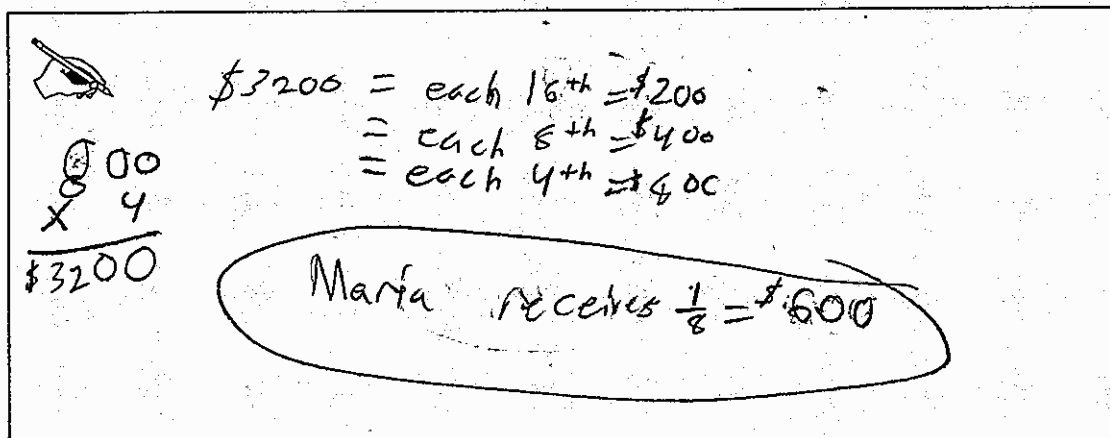
The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.



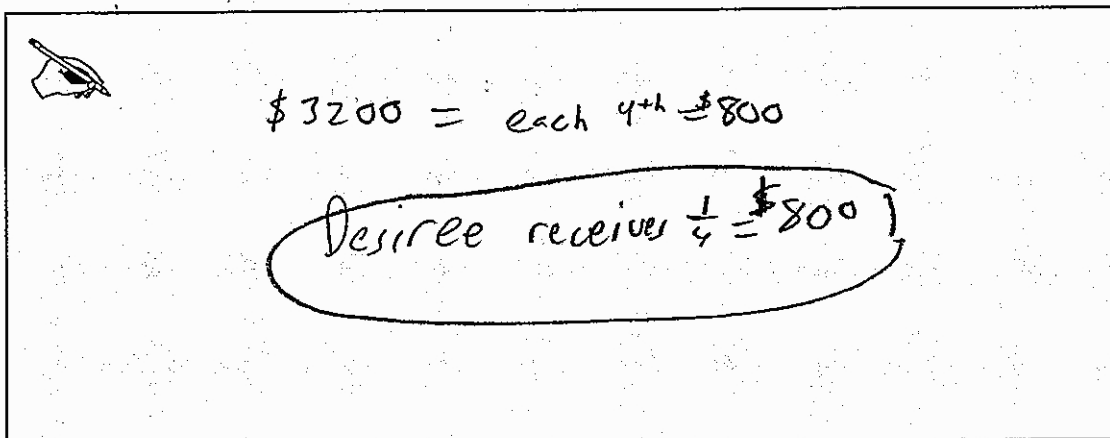
Hand-drawn solution for part b. It shows a pencil icon, the equation $3200 = \text{each } 16^{\text{th}} = \200 , and a circled answer: "James, Beth, & Tyree each receive \$200".

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.



Hand-drawn solution for part c. It shows a pencil icon, a multiplication problem $\begin{array}{r} 200 \\ \times 4 \\ \hline 800 \end{array}$, the equation $\$3200 = \text{each } 16^{\text{th}} = \200 , followed by $= \text{each } 8^{\text{th}} = \400 and $= \text{each } 4^{\text{th}} = \800 . The circled answer is "Maria receives $\frac{1}{8} = \$600$ ".

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.



Hand-drawn solution for part d. It shows a pencil icon, the equation $\$3200 = \text{each } 4^{\text{th}} = \800 , and a circled answer: "Desiree receives $\frac{1}{4} = \$800$ ".

Anchor 8

Litho 00385200183

Total Content Points: 0

Total Practice Points: 2 (MP1, MP4)

In Part A, the student does not solve any equations that have fractions to determine the fractional amount of the treasure Sonya keeps (no credit for 5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (\$200) in Part B and $\frac{1}{4}$ of 3200 (\$800) in Part D, but the calculation for $\frac{1}{8}$ of 3200 (\$600) in Part C is incorrect (no credit for 5.NF.B.4). In Part A, the student accurately represents the fractional parts of the treasure that each person receives with a labeled diagram divided into sixteenths (MP4). The diagram indicates that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya $\left(\frac{7}{16}\right)$, and the student shows that each of three friends receives $\frac{1}{16}$ of the treasure (MP1).

Total Awarded Points: 2 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{3}{16}$ of the treasure. I
- Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure. M
- Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure. D
- Sonya keeps the rest of the treasure.

a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

$D \frac{1 \times 4}{4 \times 4} = \frac{4}{16} + \frac{2}{16} + \frac{3}{16} = \frac{9}{16}$
 $M \frac{1 \times 2}{8 \times 2} = \frac{2}{16}$

$\frac{1}{16} \downarrow \quad \frac{1}{16} \downarrow \quad \frac{1}{16} \downarrow \quad \frac{1}{8} \downarrow \quad \frac{1}{4} \downarrow$

Sonya gets $\frac{12}{16}$ of it.


J	B	T	M	S	S	S	S
S	S	S	H	S	S	S	S

$\frac{1}{16}$ piece is for James, Beth, Tyree
 $\frac{1}{8}$ piece is for Maria
 $\frac{1}{4}$ piece is for Desiree
 The rest is for Sonya

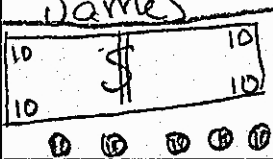
Found Treasure Task

The treasure's value is \$3200.

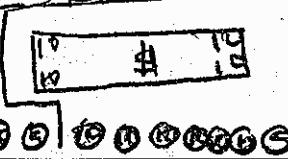
- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

 Each person would get about \$10.66.

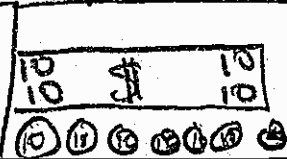
\$10.66
James



\$10.66
Beth




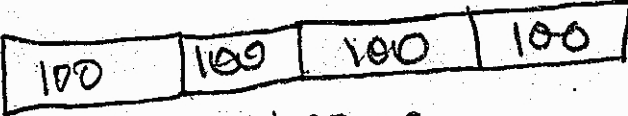
\$10.66
Tyree



$$\begin{array}{r} 10.66 \\ 3 \overline{) 3200} \\ \underline{30} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 2 \end{array}$$

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.


 Maria would get \$400 dollars.

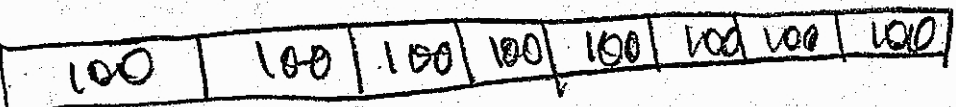


\$400.00

$$\begin{array}{r} 400 \\ 8 \overline{) 3200} \\ \underline{32} \\ 0 \end{array}$$

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

 Desiree would get double what Maria got so she would have gotten 800.



\$800.00

Total Content Points: 0

Total Practice Points: 1 (MP1)

In Part A, although the student correctly adds the fractions of the treasure given to Sonya's friends by replacing all fractions with equivalent fractions with like denominators

$\left(\frac{4}{16} + \frac{2}{16} + \frac{3}{16} = \frac{9}{16}\right)$, the student does not subtract the fraction found from one whole to find the

fraction of the treasure Sonya keeps, instead giving an incorrect answer $\left(\frac{12}{16}\right)$ (no credit

for 5.NF.A.1). The student correctly calculates $\frac{1}{8}$ of 3200 (\$400) in Part C and $\frac{1}{4}$ of 3200

(\$800) in Part D, but the calculation for $\frac{1}{16}$ of 3200 (\$200) in Part B is incorrect (no credit

for 5.NF.B.4). The student indicates that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya, and shows that each of three friends

receives $\frac{1}{16}$ of the treasure, for a total of $\frac{3}{16}$ (MP1). However, the diagram in Part A does not

accurately represent the correct fractional parts of the treasure that each person receives,

indicating that Desiree and Maria receive fractions of $\frac{1}{16}$ rather than fractions of the whole

(no credit for MP4).

Total Awarded Points: 1 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

Handwritten work showing the solution:

$$\frac{1}{16} + \frac{1}{8} + \frac{1}{4} + \frac{1}{16}$$

$$\frac{1}{8} = \frac{2}{16} \quad \frac{1}{4} = \frac{4}{16} \quad \frac{1}{16} = \frac{1}{16}$$

$$\frac{2}{16} + \frac{4}{16} + \frac{1}{16} = \frac{7}{16}$$

Sonya keeps $\frac{7}{16}$ for herself

Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

$\frac{1}{16} + \frac{1}{16} + \frac{1}{16} = \frac{3}{16}$ Each of them gets $\frac{1}{16}$

$200 \times 16 = 3200$

$3200 \div 16 = 200$

They each get \$200

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

$\frac{2}{8} = \frac{2}{16}$ She gets $\frac{2}{16}$

$200 \times 2 = 400$ She gets \$400

$3200 \div 8 = 400$

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

$\frac{1}{4} = \frac{4}{16}$

$200 \times 4 = 800$

$3200 \div 4 = 800$

She gets $\frac{4}{16}$
 She gets \$800

Anchor 10

Litho 01265200183

Total Content Points: 1 (5.NF.B.4)

Total Practice Points: 0

In Part A, the student incorrectly solves an incorrect process (finding the total of $\frac{1}{16} + \frac{1}{8} + \frac{1}{4}$ and taking that total as the answer, rather than finding the total fraction given to Sonya's friends and subtracting that total from the whole) to find a coincidentally correct result, which is considered an incorrect answer (no credit for 5.NF.A.1). The student correctly calculates $\frac{1}{16}$ of 3200 (\$200) in Part B, $\frac{1}{8}$ of 3200 (\$400) in Part C, and $\frac{1}{4}$ of 3200 (\$800) in Part D (5.NF.B.4).

The student neither shows that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya, nor indicates that each of three friends receives $\frac{1}{16}$ of the treasure, instead using $\frac{1}{16}$ for one friend (no credit for MP1). In Part A, the student does not provide a model to represent the fractional parts of the treasure that each person receives (no credit for MP4).

Total Awarded Points: 1 out of 4

Found Treasure Task

Sonya is walking on the beach and finds a buried treasure! Sonya decides to give each of her friends a fraction of the treasure.

- James, Beth, and Tyree EACH receive $\frac{1}{16}$ of the treasure.
 - Sonya's good friend Maria receives $\frac{1}{8}$ of the treasure.
 - Sonya's best friend, Desiree, receives $\frac{1}{4}$ of the treasure.
 - Sonya keeps the rest of the treasure.
- a. What fraction of the treasure does Sonya keep for herself? Use addition and/or subtraction of fractions in one or more equations to find your answer. Include a diagram to show your thinking.

Handwritten work showing the solution to the problem:

$\frac{1}{16}$ $\frac{1 \times 2}{8 \times 2} = \frac{2}{16}$ $\frac{1 \times 4}{4 \times 4} = \frac{4}{16}$

$$\begin{array}{r} \frac{1}{16} \\ \frac{2}{16} \\ \frac{4}{16} \\ \hline + \frac{1}{16} \\ \hline \frac{7}{16} \end{array}$$

Diagram: A horizontal bar divided into 16 equal segments. The first 9 segments are shaded with diagonal lines, representing the total amount given to friends. The remaining 7 segments are unshaded, representing the amount Sonya keeps.

Sonya keeps $\frac{7}{16}$ of the treasure for herself.

Found Treasure Task

The treasure's value is \$3200.

- b. How much of the treasure's value do James, Beth, and Tyree EACH receive? Label your answer in dollars.

Handwritten work for problem b:

$$\begin{array}{r} \overline{)3200} \\ \underline{30} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 2 \end{array}$$

Answer: $1066\frac{2}{3}$

$$\begin{array}{r} 1066 \\ \times 3 \\ \hline 3198 \end{array}$$

- c. How much of the treasure's value does Maria receive? Label your answer in dollars.

Handwritten work for problem c:

$$\begin{array}{r} \overline{)3200} \\ \underline{32} \\ 00 \end{array}$$

Answer: 800

- d. How much of the treasure's value does Desiree receive? Label your answer in dollars.

Handwritten work for problem d:

$$\begin{array}{r} \overline{)3200} \\ \underline{30} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Answer: 640

Total Content Points: 0

Total Practice Points: 0

In Part A, the student finds the total of $\frac{1}{16} + \frac{1}{8} + \frac{1}{4}$, but does not add all three parts that are $\frac{1}{16}$ and does not show the correct process of subtracting the total given to Sonya's friends from the whole, leading to an incorrect answer (no credit for 5.NF.A.1). The student incorrectly calculates $\frac{1}{16}$ of 3200 (\$1066) in Part B, $\frac{1}{8}$ of 3200 (\$800) in Part C, and $\frac{1}{4}$ of 3200 (\$640) in Part D (no credit for 5.NF.B.4). The student does not show that the amounts given away must be subtracted from 1 whole to determine the fractional amount left for Sonya, and does not indicate that each of three friends receives $\frac{1}{16}$ of the treasure for a total of $\frac{3}{16}$, instead using $\frac{1}{16}$ for one friend (no credit for MP1). The diagram in Part A, although correctly divided into sixteenths, lacks labels to represent the fractional parts of the treasure each person receives (no credit for MP4).

Total Awarded Points: 0 out of 4