

Tennessee Comprehensive Assessment Program

TCAP/CRA 2013



4

Anchor Set

Grade 4 – Comparing Reading Books Task

SECURE MATERIAL - Reader Name: _____

Tennessee Comprehensive Assessment Program

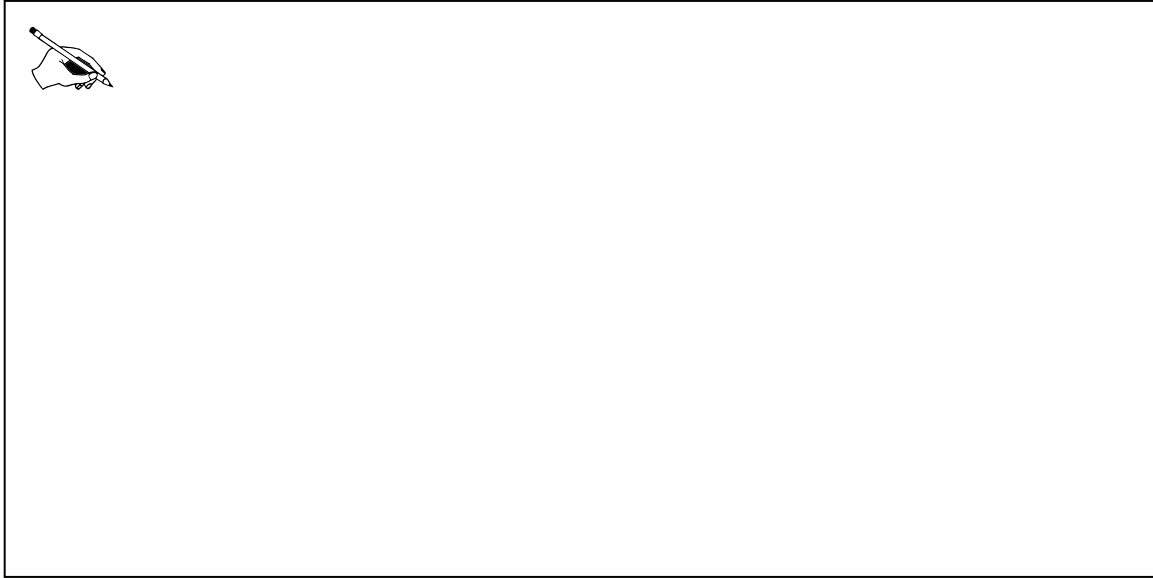
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Part 2: Constructed Response Assessment

Comparing Reading Books Task

Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

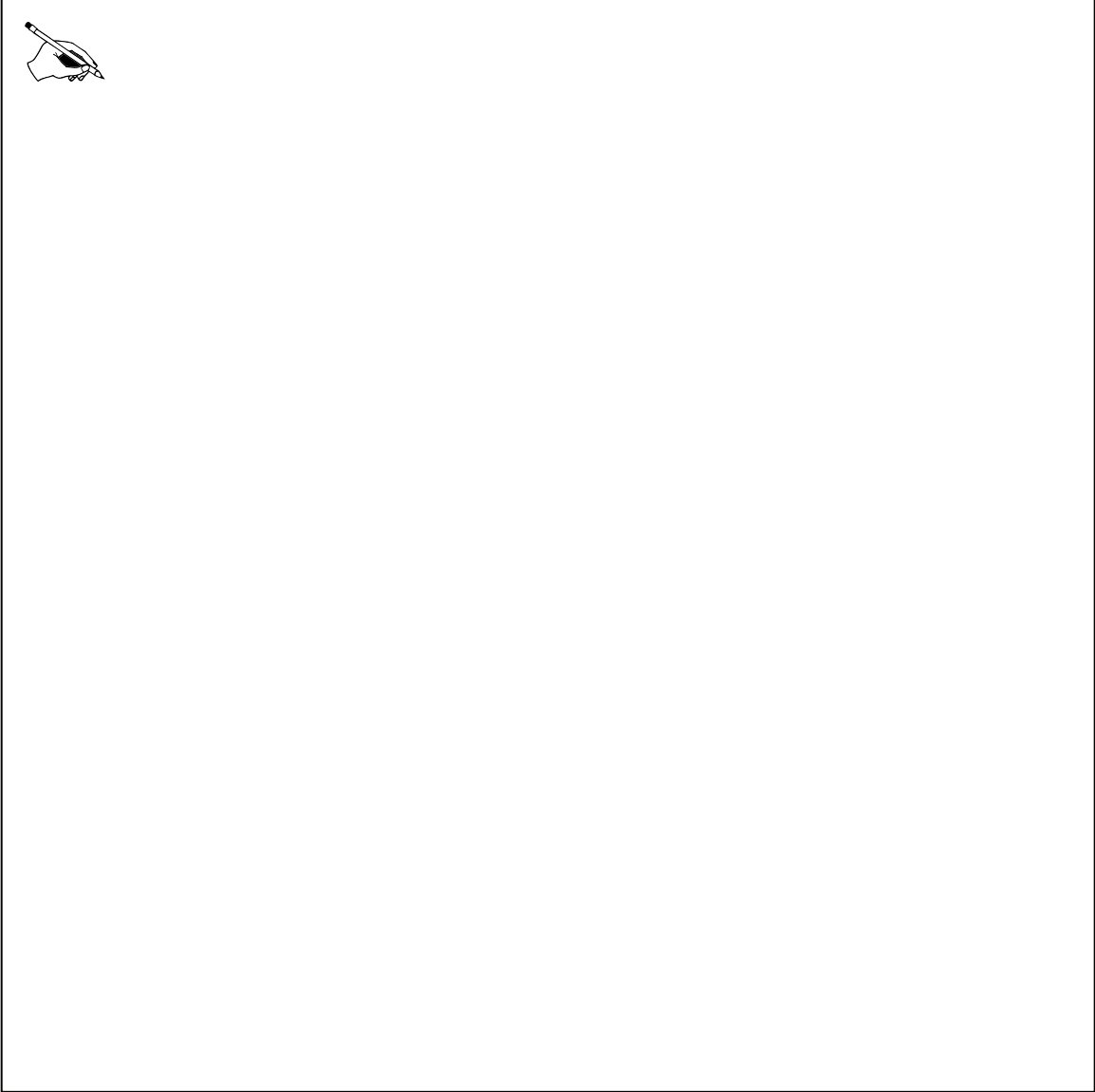


- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



Part 2: Constructed Response Assessment

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



REVIEW YOUR
WORK IF YOU
HAVE TIME.

Scoring Guide

The CCSS for Mathematical Content (3 points)

4.OA.A.1 Uses the diagram or number line to represent the comparison of Catherine's books read to Stuart's. Student must indicate through their representation that the 42 books read by Stuart is three times the number read by Catherine. **(1 Point)** _____

4.OA.A.2 The student uses multiplication to show that 42 is three times 14, such as: _____

– $3 \times 14 = 42$

– $14 \times 3 = 42$

– 14

$$\begin{array}{r} \times 3 \\ 42 \end{array}$$

42

(1 Point)

4.OA.A.2 The student uses division to show that 42 is three times 14, such as: _____

– $42 \div 3 = 14$

– $42 \div 14 = 3$

– $3 \overline{)42}$ **(1 Point)**

The CCSS for Mathematical Practice (4 points)

MP1 Indicates through the diagram, explanations, and equations that s/he recognizes that there is a multiplicative relationship between the number of books read by each sibling; attends to all parts of the task. **(1 Point)** _____
(MP1: Make sense of problems and persevere in solving them.)

MP2 Abstracts the numbers 3 and 42 from the problem and uses them to compare; re-contextualizes the answer back to the context by indicating that the 14 books read by Catherine is one third the number of books read by Stuart. **(1 Point)** _____
(MP2: Reason abstractly and quantitatively.)

MP4 Provides a diagram or number line as well as equations related to the mathematics in the context. **(1 Point)** _____
(MP4: Model with mathematics.)

MP7 Connects multiplication and division by writing accurate equations that link the inverse operations and identifies the meaning of each term in each equation showing that the 14 and the 42 have the same meaning in both the division and the multiplication. **(1 Point)** _____
(MP7: Look for and make use of structure.)

TOTAL POINTS: 7

The CCSS for Mathematical Content Addressed In This Task

Use the four operations with whole numbers to solve problems.

- | | |
|----------|--|
| 4.OA.A.1 | Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. |
| 4.OA.A.2 | Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. |

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.


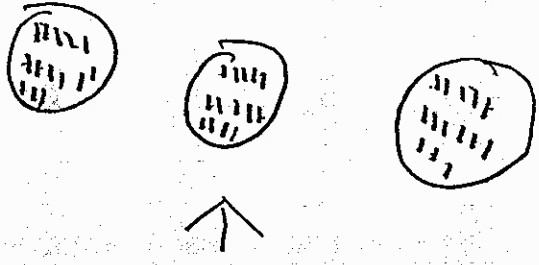
3. Comparing Reading Books Task

Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

<p>Stuart</p>  $\begin{array}{r} 14 \\ 3 \overline{)42} \\ \underline{-3} \\ 12 \\ \underline{-12} \\ 0 \end{array}$ <p>Total 42 $42 \div 3 = 14$</p>	<p>① \div 42 by 3 \Rightarrow 14</p> <p>② C has 14 books read</p> <p>③ to check your answer do $14 \times 3 = 42$.</p>	<p>Catherine read</p> <p>14</p>
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- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.

<p> $\times 3$</p> <p>$S = 42$</p> <p>$C = ?$ (14)</p> <p>$C = 14$</p>	 <p>42</p>	<p>In each circle there is 14</p>
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- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.

① Stuart has $\times 3$ as C so
since S has 42. $42 \div 3 = 14$.

② - That is how you know how many
C has. To check with \times to $14 \times$
 $3 = 42$.

Key
S = Stuart
C = Catherine

Anchor 1

Litho 0033

Total Content Points: 3 (4.OA.A.1, 4.OA.A.2x, 4.OA.A.2z)

Total Practice Points: 4 (MP1, MP2, MP4, MP7)


The student provides an accurate diagram in Part B that shows a multiplication equation as a comparison (e.g., 42 subdivided into 3 groups of 14) (4.OA.A.1). In Part A, the student writes correct multiplication ($14 \times 3 = 42$) and division ($42 \div 3 = 14$) equations to solve a word problem involving multiplicative comparison (4.OA.A.2x; 4.OA.A.2z). The student's inclusion of a related multiplication equation in Part A and a diagram in Part B indicates recognition of a multiplicative relationship; the student also attends to all parts of the task (MP1). In Part B, the diagram shows the student has abstracted the numbers 3 and 42 from the problem and compared them, contextualizing that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram in Part B and equations in Part A related to the context of the problem (MP4). In Part C, the student identifies the meaning of each term in the division and multiplication equations by labeling and explaining them, linking the inverse operations (MP7).

Total Awarded Points: 7 out of 7

3. Comparing Reading Books Task


Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

 $42 \div 3 = 14$
 Catherine read 14 books in all.
 But Stuart read 28 books more.


$\begin{array}{r} 42 \\ -14 \\ \hline 28 \end{array}$ $42 - 14 = 28$ books more

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.

 $14 + 14 + 14 = 42$

$\begin{array}{r} 14 \\ + 14 \\ + 14 \\ \hline 42 \end{array}$

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.

 $7 \times 6 = 42$
 $6 \times 7 = 42$
 $42 \div 6 = 7$
 $42 \div 7 = 6$

Since in the (part b) I drew 42 circles then they were divided into 3 equal groups. So I counted & 14 were in each group.

$\begin{array}{r} 10000000 \\ 20000000 \\ \hline 30000000 \\ 40000000 \\ \hline 50000000 \\ 60000000 \\ \hline 6 \times 7 = 42 \end{array}$	$\begin{array}{l} 1, 2 \text{ paired} \\ 3, 4 \text{ paired} \\ 5, 6 \text{ paired} \\ \hline \leftarrow \text{now each group} \\ \text{is } 2 \times 7 \\ \neq 7 = 14 \\ \begin{array}{r} 20000000 \\ 20000000 \end{array} \end{array}$
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$3 \times 14 = 42$

Anchor 2

Litho 0108

Total Content Points: 3 (4.OA.A.1, 4.OA.A.2x, 4.OA.A.2z)

Total Practice Points: 3 (MP1, MP2, MP4)


The student provides an accurate diagram in Part B that shows a multiplication equation as a comparison (e.g., 42 subdivided into 3 groups of 14) (4.OA.A.1). The student writes the correct multiplication equation ($3 \times 14 = 42$) in Part C and the correct division equation ($42 \div 3 = 14$) in Part A to solve a word problem involving multiplicative comparison (4.OA.A.2x; 4.OA.A.2z). The student's inclusion of a related multiplication equation in Part C and a diagram in Part B indicates recognition of a multiplicative relationship. Despite being unsuccessful at appropriately labeling and explaining the terms of the equations in Part C, the student's attempt is sufficient to be considered attending all parts of the task (MP1). In Part B, the diagram shows evidence that the student abstracted the numbers 3 and 42 from the problem and compared them, and contextualized that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram in Part B and equations in Parts A and C related to the mathematics in the context (MP4). In Part C, the student is not successful in explaining the connection between the multiplication and division operations, failing to identify or label the meaning of each term in each equation (no credit for MP7).

Total Awarded Points: 6 out of 7

3. Comparing Reading Books Task


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- a. If Stuart read 42 books, how many books did Catherine read?



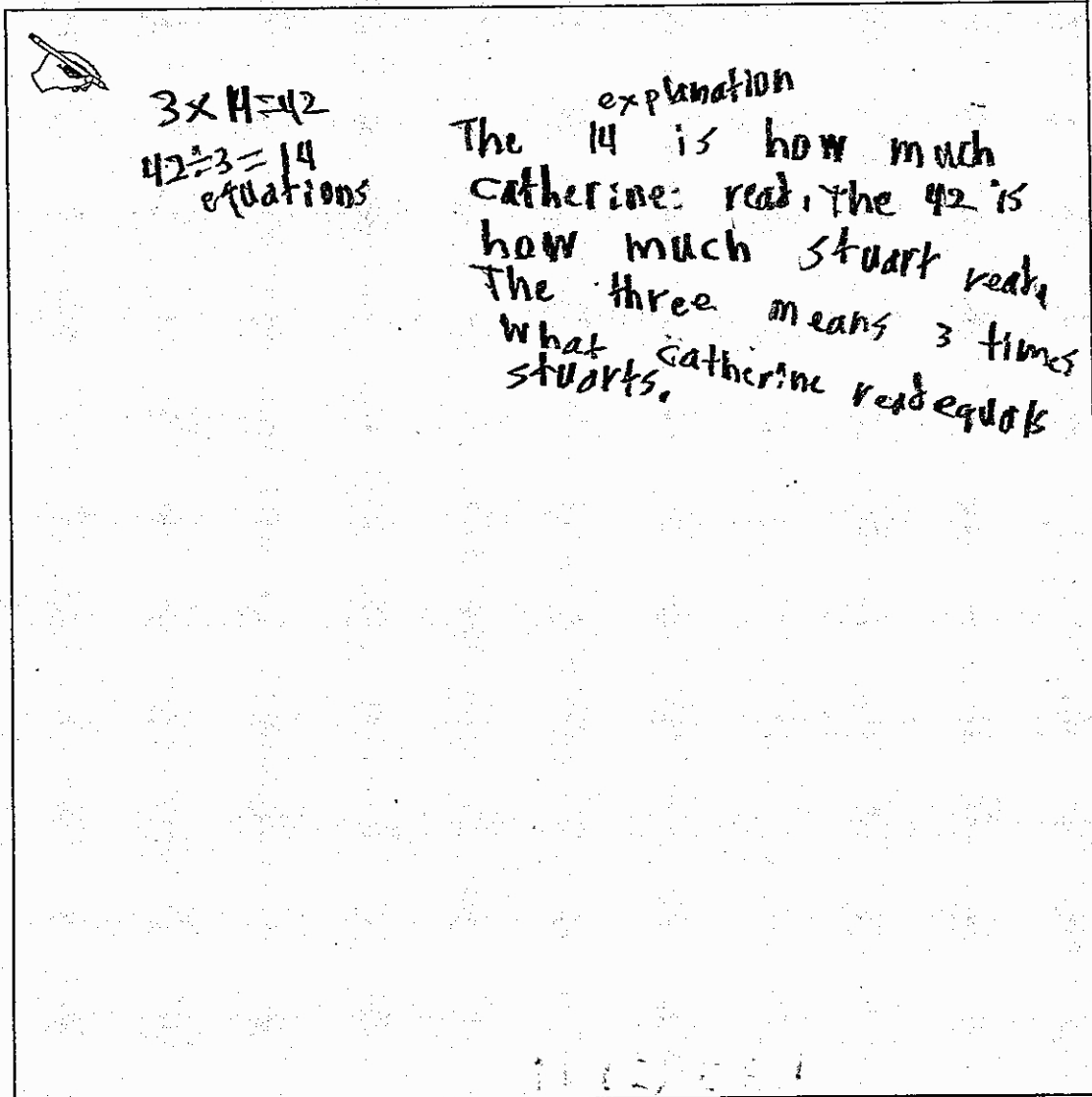
$42 \div 3 = 14$


- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



A number line from 0 to 14, with tick marks and numbers. Below the line, there are 14 groups of three vertical lines, representing 3 added 14 times. The number 42 is written at the end of the line.

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



 $3 \times 14 = 42$
 $42 \div 3 = 14$
equations

^{explanation}
The 14 is how much Catherine read, the 42 is how much Stuart read. The three means 3 times what Catherine read equals Stuart's.

Anchor 3

Litho 0158

Total Content Points: 2 (4.OA.A.2x, 4.OA.A.2z)

Total Practice Points: 4 (MP1, MP2, MP4, MP7)

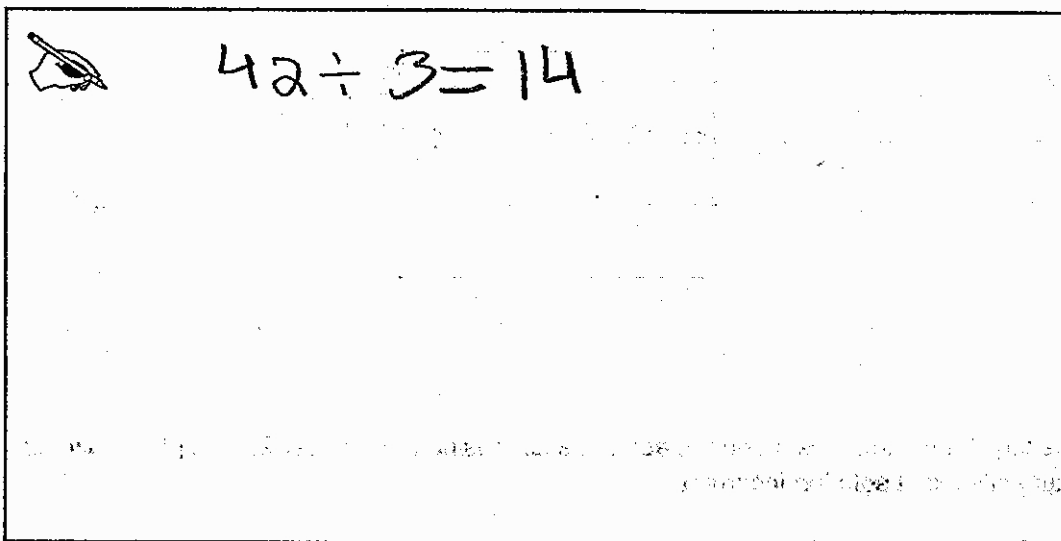
By grouping 14 groups of 3 on the number line in Part B, rather than 3 groups of 14, the student demonstrates a misinterpretation of the comparison of the number of books Catherine read to the number Stuart read (no credit for 4.OA.A.1). In Part C, the student writes the correct multiplication ($3 \times 14 = 42$) and division ($42 \div 3 = 14$) equations to solve a word problem involving multiplicative comparison (4.OA.A.2x; 4.OA.A.2z). The student's inclusion of a related multiplication equation in Part C and a diagram in Part B indicates recognition of a multiplicative relationship; the student also attends to all parts of the task (MP1). In Part C, the student demonstrates having abstracted the numbers 3 and 42 from the problem by explaining what each number in each equation represents and by showing an understanding that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram to show the context of the problem in Part B, and equations in Part C (MP4). In Part C, the student identifies the meaning of each term in the division and multiplication equations by labeling and explaining them, linking the inverse operations (MP7).

Total Awarded Points: 6 out of 7

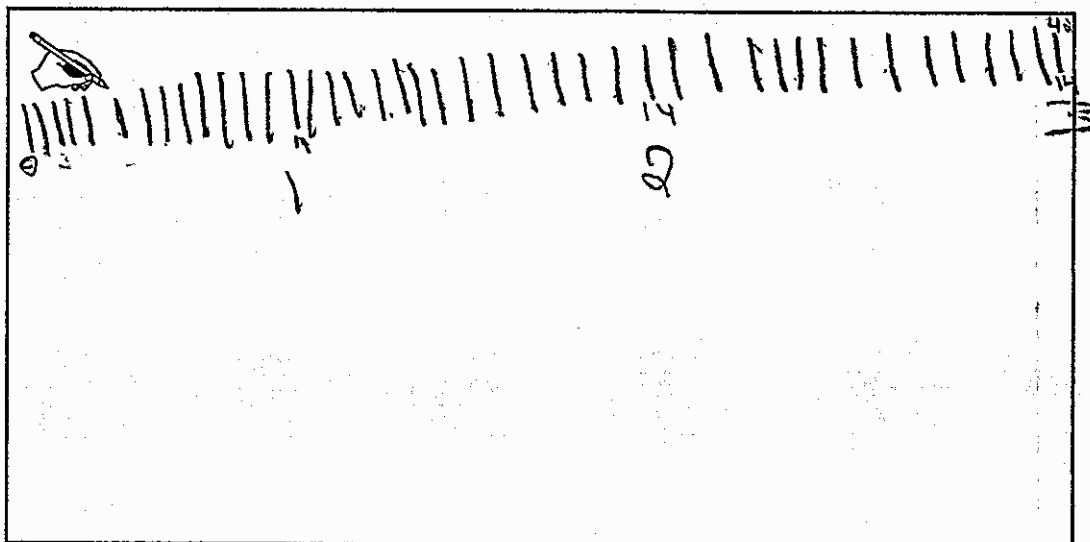
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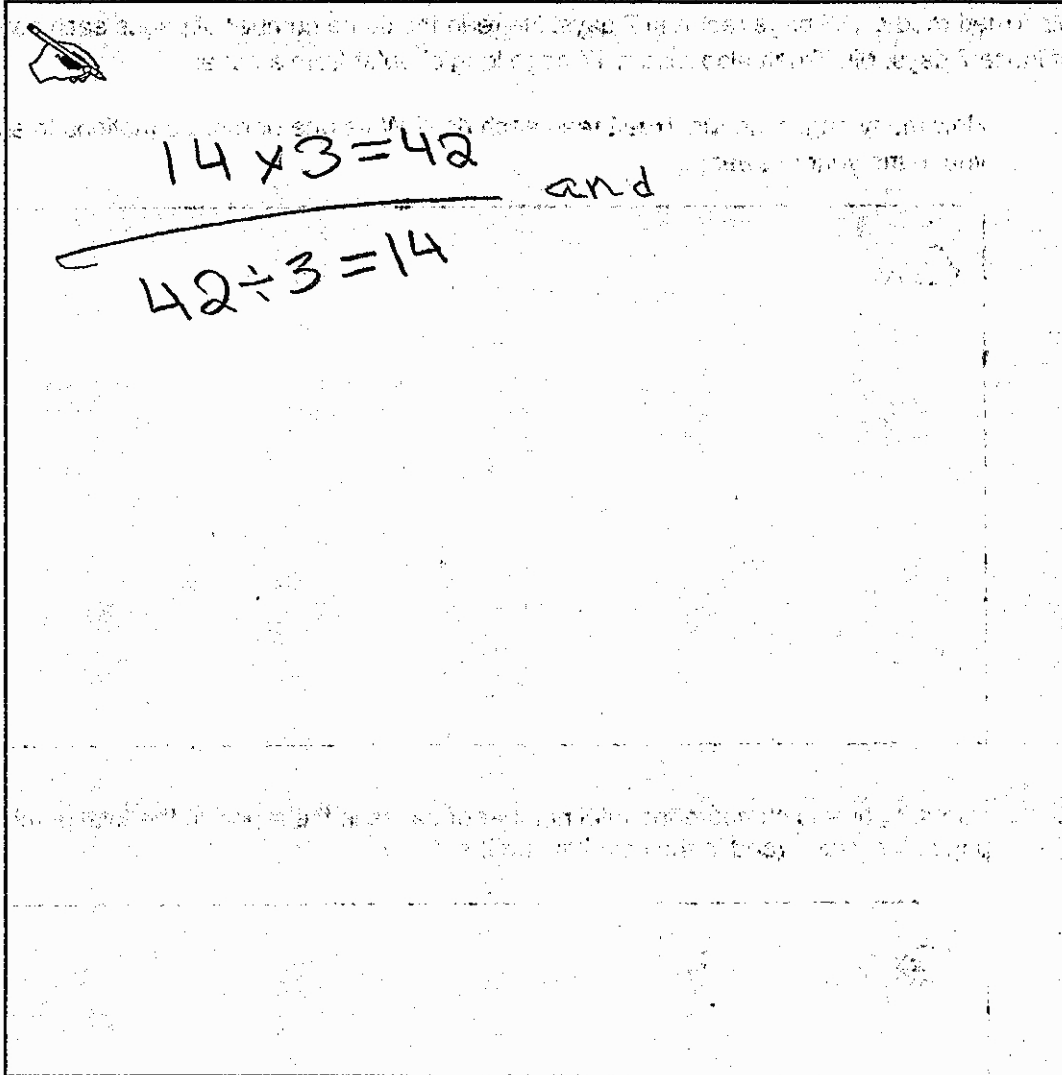
- a. If Stuart read 42 books, how many books did Catherine read?



- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



The diagram shows a hand-drawn box containing a pencil icon in the top left corner. Inside the box, the multiplication equation $14 \times 3 = 42$ is written above a horizontal line. Below the line, the division equation $42 \div 3 = 14$ is written. The word "and" is written between the two equations. The background of the box is a grid.

Anchor 4

Litho 0071

Total Content Points: 3 (4.OA.A.1, 4.OA.A.2x, 4.OA.A.2z)

Total Practice Points: 2 (MP2, MP4)

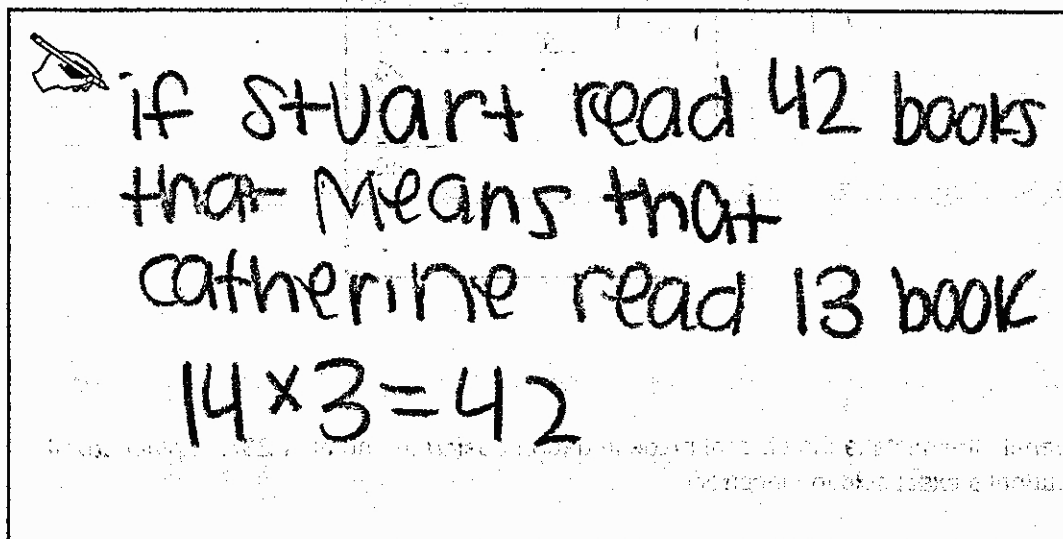
The student provides an accurate number line in Part B that demonstrates interpretation of a multiplication equation as a comparison (e.g., 42 subdivided into 3 groups of 14) (4.OA.A.1). In Part C, the student writes correct multiplication ($14 \times 3 = 42$) and division ($42 \div 3 = 14$) equations to solve a word problem involving multiplicative comparison (4.OA.A.2x; 4.OA.A.2z). The student does include a related multiplication equation in Part A and a diagram in Part B that indicate recognition of a multiplicative relationship; however, the student does not attend to all parts of the task, failing to label the values and explain a connection between the multiplication and division equations in Part C (no credit for MP1). In Part B, the diagram shows the student has abstracted the numbers 3 and 42 from the problem and compared them, contextualizing that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram in Part B related to the context of the problem, and equations in Part C (MP4). In Part C, the student does not attempt to label or explain the meaning of any term in the division and multiplication equations (no credit for MP7).

Total Awarded Points: 5 out of 7

3. Comparing Reading Books Task

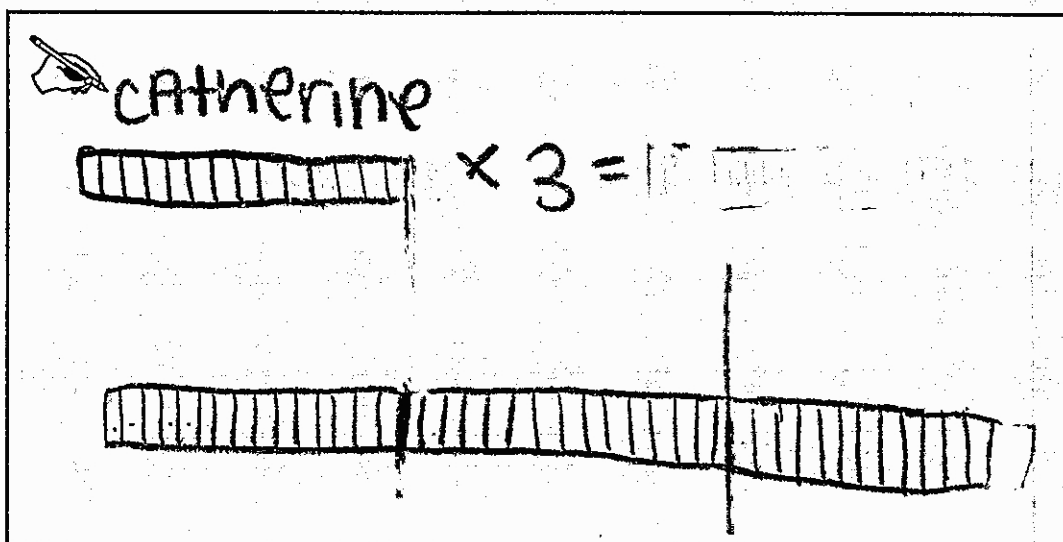
Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?



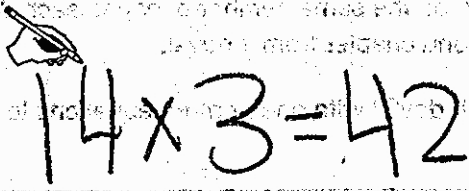
if Stuart read 42 books
that means that
Catherine read 13 book
 $14 \times 3 = 42$

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



Catherine
 $14 \times 3 = 42$

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



The image shows a rectangular box containing a handwritten equation $14 \times 3 = 42$. To the left of the equation is a small icon of a pencil pointing to the right. The box is divided into three horizontal sections by dashed lines, with the equation written in the top section. The middle and bottom sections are empty.

Anchor 5

Litho 0003

Total Content Points: 2 (4.OA.A.1, 4.OA.A.2x)

Total Practice Points: 2 (MP2, MP4)


The student provides an accurate diagram in Part B demonstrating an interpretation of a multiplication equation as a comparison (e.g., 42 subdivided into 3 groups of 14) (4.OA.A.1). In Part C, the student writes a correct multiplication equation ($14 \times 3 = 42$) to solve a word problem involving multiplicative comparison (4.OA.A.2x); however, no division equation is present (no credit for 4.OA.A.2z). The student does include a related multiplication equation in Part A and a diagram in Part B that indicate recognition of a multiplicative relationship; however, the student does not attend to all parts of the task, failing to label the values or explain a connection between the multiplication and division equations in Part C (no credit for MP1). In Part B, the diagram shows the student abstracted the numbers 3 and 42 from the problem and compared them, contextualizing that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram in Part B related to the context of the problem, and an equation in Part C (MP4). In Part C, the student does not provide a division equation as required in the prompt instructions, which is a necessary first step toward adequately expressing the connection between the multiplication and division equations (no credit for MP7).

Total Awarded Points: 4 out of 7


3. Comparing Reading Books Task

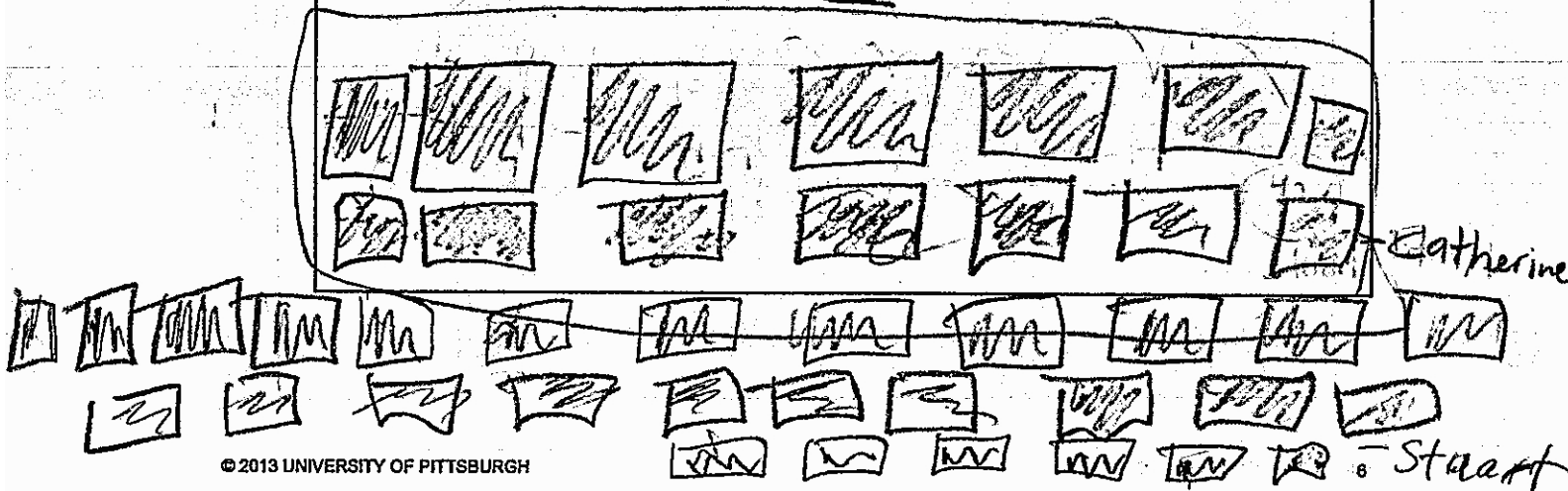
Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

 If Stuart read 42 books and it says that he ate 3 times as many books as Catherine, then we have to divide.

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.

 Stuart = 42 (3 times as many books as)
Catherine = ? books



- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.

~~4/2 = 2~~

0 1/2 1

Anchor 6

Litho 0099

Total Content Points: 2 (4.OA.A.1, 4.OA.A.2z)

Total Practice Points: 2 (MP2, MP4)

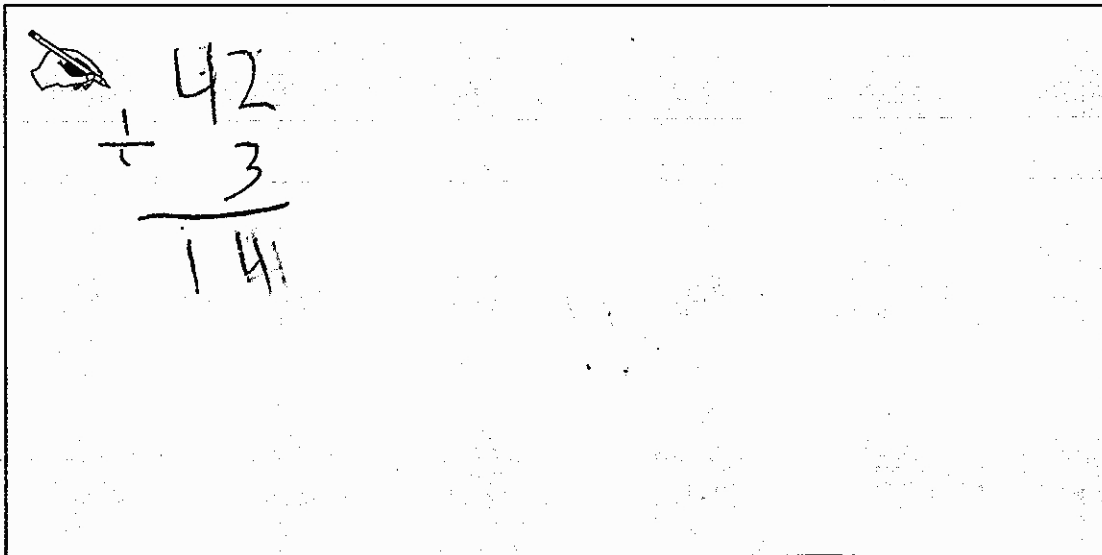
The student provides an accurate diagram in Part B that demonstrates interpretation of a multiplication equation as a comparison (e.g., 14 subdivided from a group of 42) (4.OA.A.1). There is no multiplication equation present (no credit for 4.OA.A.2x). However, the student does use a division equation ($42 \div 3 = 14$) in Part C to solve a word problem involving multiplicative comparison (4.OA.A.2z). The student does not include a related multiplication equation to indicate recognition of a multiplicative relationship, nor does the student attend to all parts of the task, failing to label the values and explain a connection between the multiplication and division equations in Part C (no credit for MP1). In Part B, the diagram shows the student abstracted the numbers 3 and 42 from the problem and compared them, contextualizing that the 14 books read by Catherine was one third the number of books read by Stuart (MP2). The student provides a diagram in Part B related to the context of the problem, and an equation in Part C (MP4). In Part C, the student does not provide a multiplication equation as required in the prompt instructions, which is a necessary first step toward adequately expressing the connection between the multiplication and division equations (no credit for MP7).

Total Awarded Points: 4 out of 7

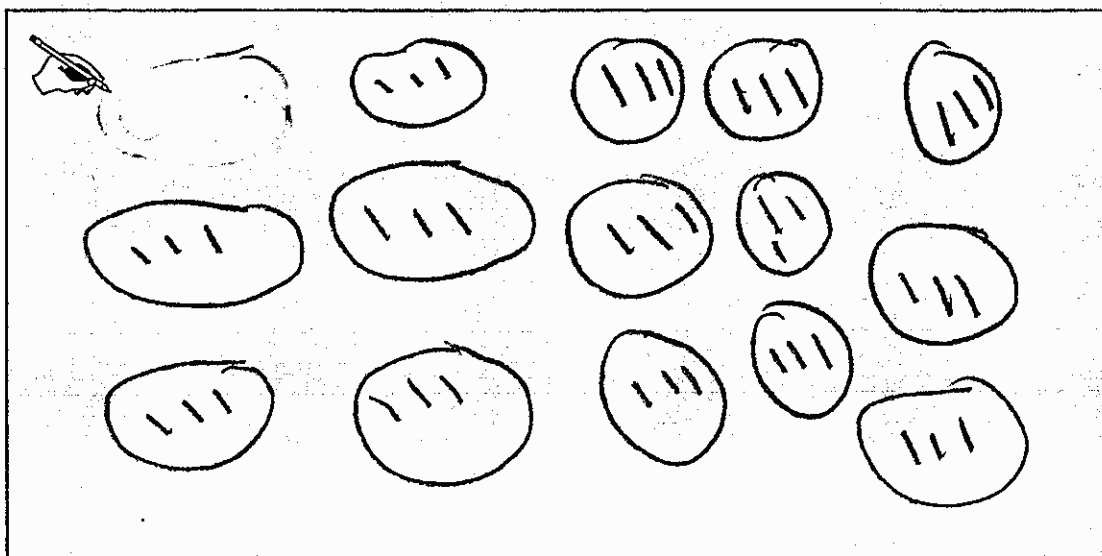
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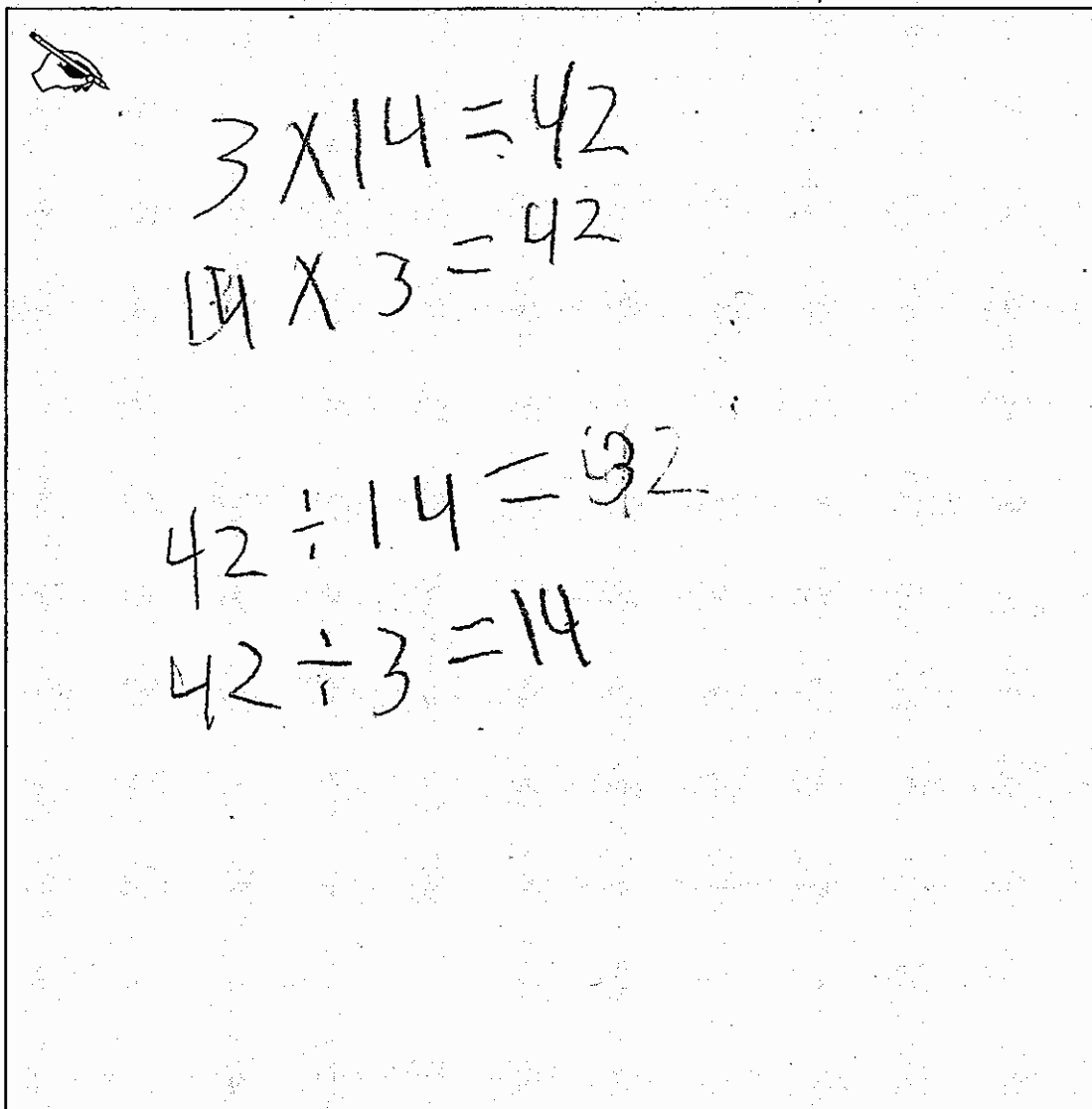
- a. If Stuart read 42 books, how many books did Catherine read?



- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



A rectangular box containing handwritten mathematical equations. In the top-left corner of the box is a small drawing of an eye. The equations are:

$$3 \times 14 = 42$$
$$14 \times 3 = 42$$
$$42 \div 14 = 3$$
$$42 \div 3 = 14$$

Anchor 7

Litho 0004

Total Content Points: 2 (4.OA.A.2x, 4.OA.A.2z)

Total Practice Points: 1 (MP4)

The diagram in Part B shows the student misinterprets the comparison of the number of books Catherine read to the number Stuart read by grouping 14 groups of 3 rather than 3 groups of 14 (no credit for 4.OA.A.1). In Part C, the student writes the correct multiplication ($3 \times 14 = 42$) and division ($42 \div 3 = 14$) equations to solve a word problem involving multiplicative comparison (4.OA.A.2x; 4.OA.A.2z). The student does include a related multiplication equation in Part C and a diagram in Part B that indicate recognition of a multiplicative relationship; however, the student does not attend to all parts of the task, failing to label the values or explain a connection between the multiplication and division equations in Part C (no credit for MP1). The student does not provide a sufficient diagram or an explanation demonstrating that the numbers 3 and 42 were abstracted from the problem, failing to contextualize that the 14 books read by Catherine was one third the number of books read by Stuart (no credit for MP2). The student provides a diagram in Part B related to the context of the problem, and an equation in Part C (MP4). In Part C, the student does not attempt to label or explain the meaning of the terms in the division and multiplication equations (no credit for MP7).

Total Awarded Points: 3 out of 7

3. Comparing Reading Books Task

Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

$126 \div 42 = 3$
 $42 \times 3 = 126$
 Catherine read 126 books.

42


~~A = B~~
 $A = B \quad B = 21$
 $0 = 3$

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.

42

~~A = B~~
 $A = 1$
 $B = 21$
 $0 = 3$

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



$126 = 42 \times 3$
 $3 \times 42 = 126$

42 represents the # of how many books Stuart read.

3 represents how many more times Catherine read.

126 represents how many books Catherine read.

Anchor 8

Litho 0123

Total Content Points: 0

Total Practice Points: 2 (MP1, MP7)

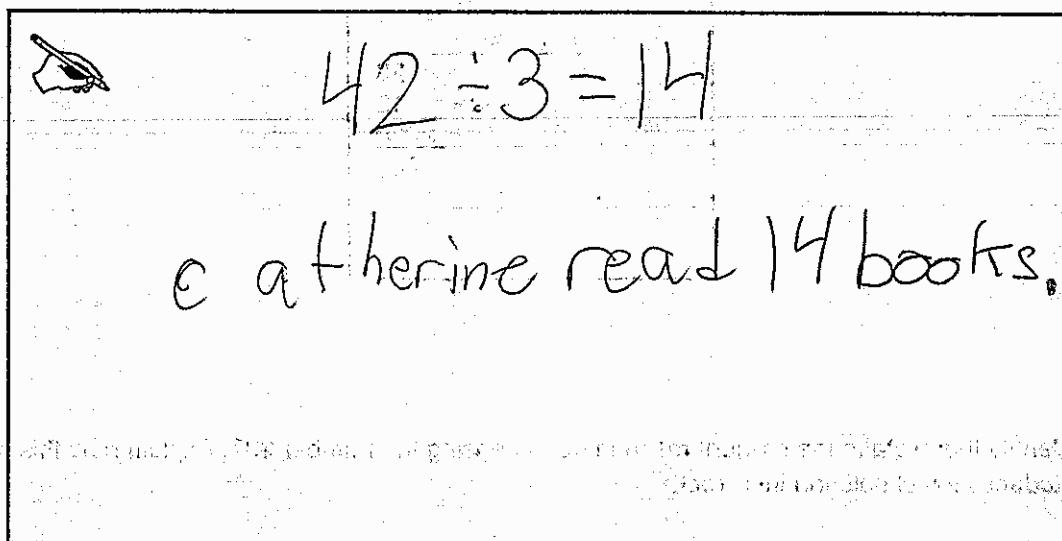
The diagram that the student provides in Part B merely re-illustrates the values provided in the prompt, unsuccessfully representing a comparison of the number of books Catherine read to the number Stuart read (no credit for 4.OA.A.1). None of the equations the student provides are appropriate for solving the word problem, which involves multiplicative comparison (no credit for 4.OA.A.2x; no credit for 4.OA.A.2z). The student's inclusion of a multiplication equation in Part A indicates recognition of a multiplicative relationship; the student also attends to all parts of the task (MP1). Neither the student's diagram in Part B nor the explanation in Part C shows the student correctly abstracted the numbers 3 and 42 from the problem for comparison, failing to illustrate that the 14 books read by Catherine was one third the number of books read by Stuart (no credit for MP2). The student's diagram in Part B merely gives the terms of the division equation from Part A again, and no indication is given of how it aided the student's solution (no credit for MP4). In Part C, despite the use of values that give an incorrect solution, the student identifies the meaning of each term in the division and multiplication equations by labeling and explaining them, linking the inverse operations (MP7).

Total Awarded Points: 2 out of 7

3. Comparing Reading Books Task

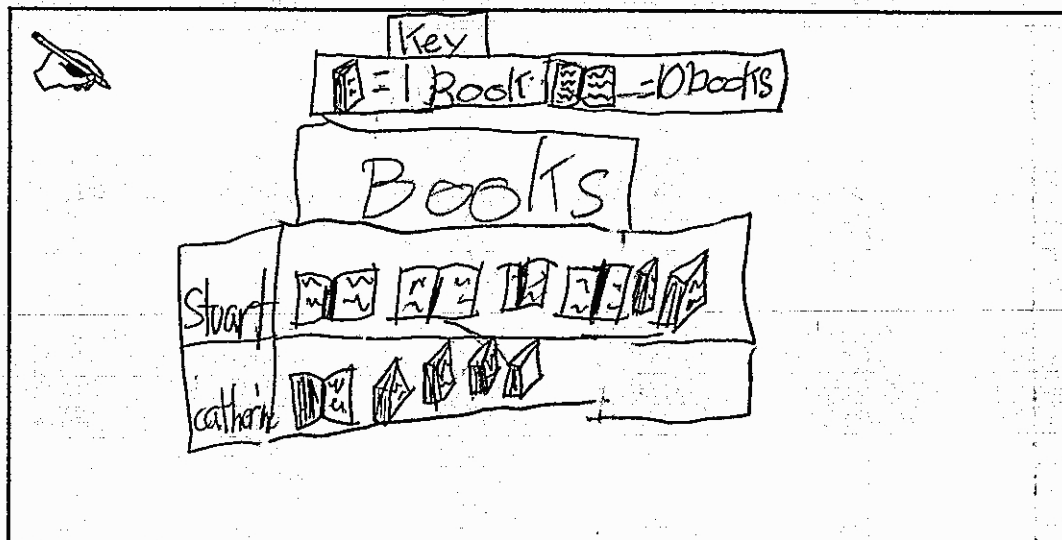
Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?




A handwritten solution for part a. It features a pencil icon in the top left corner. The equation $42 \div 3 = 14$ is written in the center. Below the equation, the text "Catherine read 14 books." is written.

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



A handwritten drawing illustrating the calculation for part b. At the top, a box labeled "Key" shows a single book icon followed by "= 1 Book" and a group of three book icons followed by "= 3 Books". Below the key is a large box labeled "Books". Underneath, two rows of book icons are shown. The top row is labeled "Stuart" and contains 14 book icons. The bottom row is labeled "Catherine" and contains 4 book icons, representing one-third of Stuart's total.

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.

 $12 \div 3 = 4$ Catherine's books

Stuart's books

I said 3 times as many

Anchor 9

Litho 0102

Total Content Points: 1 (4.OA.A.2z)

Total Practice Points: 0


The diagram that the student provides in Part B merely illustrates the values provided in the prompt. Because the diagram lacks a unifying scale that allows for direct unit-by-unit comparison between the number of books Catherine read versus the number read by Stuart, it does not clearly represent that the 42 books read by Stuart is 3 times the number read by Catherine (no credit for 4.OA.A.1). There is no multiplication equation present (no credit for 4.OA.A.2x). However, the student does use a division equation ($42 \div 3 = 14$) in Part A to solve a word problem involving multiplicative comparison (4.OA.A.2z). The student does not include a related multiplication equation to indicate recognition of a multiplicative relationship, nor does the student attend to all parts of the task (no credit for MP1). Neither the student's diagram in Part B nor the explanation in Part C sufficiently demonstrates the student's abstraction of the numbers 3 and 42 from the problem for comparison, failing to contextualize that the 14 books read by Catherine was one third the number of books read by Stuart (no credit for MP2). The student's diagram in Part B merely shows the terms of the division equation from Part A, and no indication is given of how the diagram aided the student's solution (no credit for MP4). In Part C, the student does not provide a multiplication equation, which is a necessary first step toward adequately expressing the connection between the multiplication and division equations (no credit for MP7).

Total Awarded Points: 1 out of 7

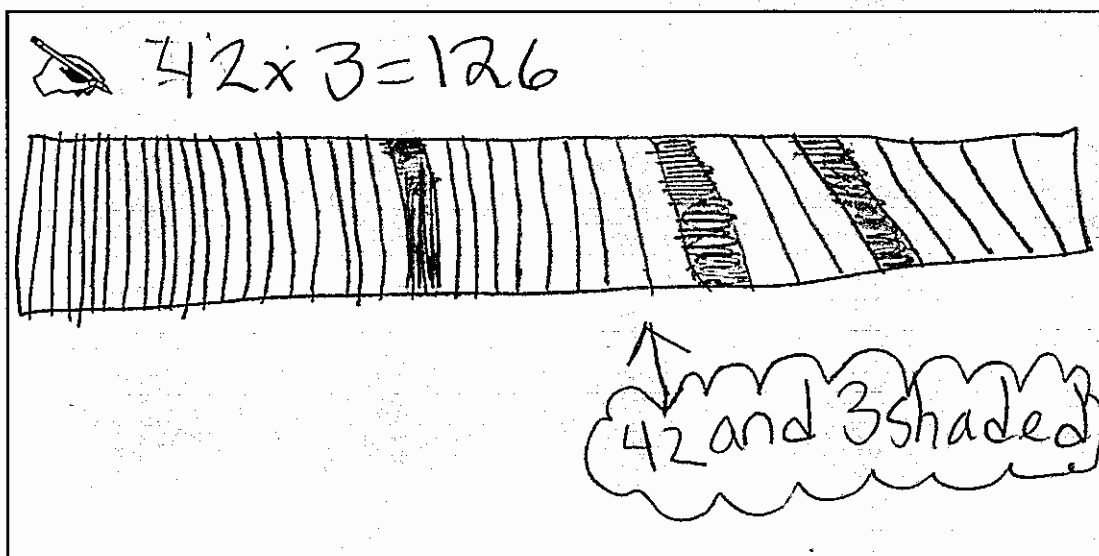
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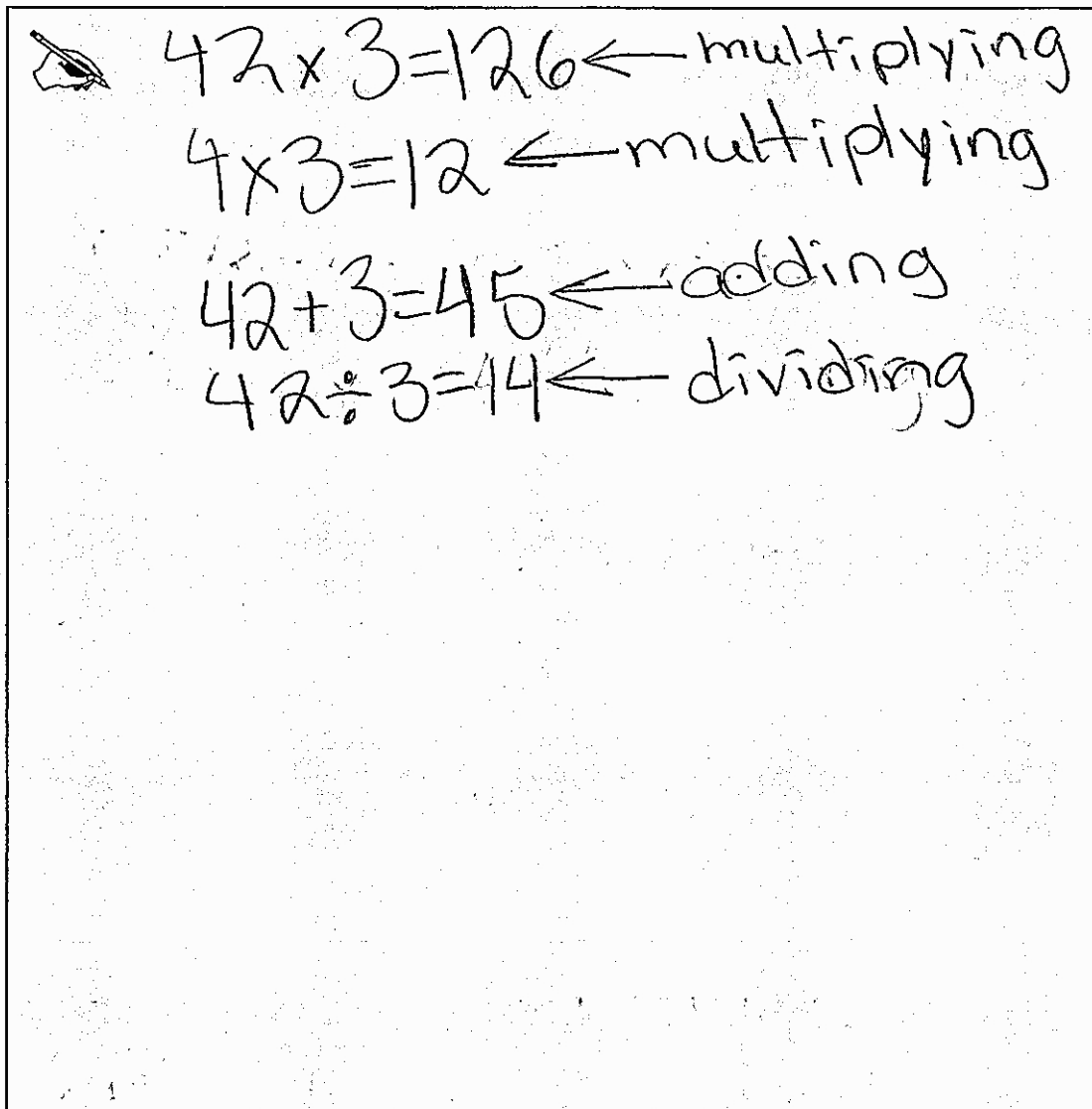
- a. If Stuart read 42 books, how many books did Catherine read?


 Stuart read 42 books and Catherine read 12 books. It seems that my calculator says that $42 \times 3 = 126$ and it says that Stuart read 42 books but that is not true. What if equal's 12 is $4 \times 3 = 12$

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.



- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.



 $42 \times 3 = 126$ ← multiplying
 $4 \times 3 = 12$ ← multiplying
 $42 + 3 = 45$ ← adding
 $42 \div 3 = 14$ ← dividing

Total Content Points: 0

Total Practice Points: 0

The diagram that the student provides in Part B is unclearly explained and insufficiently labeled, and does not successfully represent a comparison of the number of books Catherine read to the number Stuart read (no credit for 4.OA.A.1). The student does not provide an appropriate multiplication equation, and while there is an appropriate division equation in Part C ($42 \div 3 = 14$), the presence of an assortment of equations incorrect for the prompt demonstrates the student has no understanding of how to solve a word problem involving multiplicative comparison (no credit for 4.OA.A.2x; no credit for 4.OA.A.2z). The student's inclusion of a multiplication equation in Part A indicates recognition of a multiplicative relationship; however, the student does not attend to all parts of the task, failing to label the values and not explaining a connection between the multiplication and division equations in Part C (no credit for MP1). The student does not provide a sufficient diagram or an explanation to successfully show the abstraction of the numbers 3 and 42 from the problem for comparison, and so fails to illustrate that the 14 books read by Catherine was one third the number of books read by Stuart (no credit for MP2). The student's diagram in Part B is not sufficiently related to the context of the problem (no credit for MP4). In Part C, the student does not attempt to identify or explain the meaning of the terms in the division and multiplication equations (no credit for MP7).

Total Awarded Points: 0 out of 7

3. Comparing Reading Books Task

Stuart and Catherine are comparing how many books they have read. Stuart read three times the number of books that Catherine read.

- a. If Stuart read 42 books, how many books did Catherine read?

$3 \times 3 = 9$ Catherine

$3 \times 3 = 9$

42 Stuart

- b. Use a drawing or a number line to show how you calculated the number of books Catherine read.

catherine read 9 books because it said 3x the number of books that catherine read.

Catherine 9

and

Stuart 42

- c. Write a multiplication equation *and* a division equation that match your drawing or number line. Explain what each number in each equation represents.

The student has written the equation $3 \times 3 = 9$ with a drawing of a quill pen to the left. Below this, they have drawn a multiplication array consisting of two rows of three squares each, followed by an equals sign, a row of nine small squares, and the number 9.

Total Content Points: 0

Total Practice Points: 0

The diagram that the student provides in Part B does not successfully represent a comparison indicating the 42 books read by Stuart was 3 times the number read by Catherine (no credit for 4.OA.A.1). None of the equations the student provides are appropriate for solving the word problem, which involves multiplicative comparison (no credit for 4.OA.A.2x; no credit for 4.OA.A.2z). The student's inclusion of a multiplication equation in Part A indicates recognition of a multiplicative relationship; however, the student does not attend to all parts of the task, failing to provide a division equation in Part C (no credit for MP1). The student does not provide a sufficient diagram or an explanation to show successful abstraction of the numbers 3 and 42 from the problem for comparison, and thus fails to illustrate that the 14 books read by Catherine was one third the number of books read by Stuart (no credit for MP2). The student's diagram in Part B is not sufficiently related to the context of the problem (no credit for MP4). In Part C, the student does not provide a division equation as required in the prompt instructions, which is a necessary first step toward adequately expressing the connection between the multiplication and division equations (no credit for MP7).

Total Awarded Points: 0 out of 7