

Tennessee Comprehensive Assessment Program

TCAP/CRA 2013



2

Anchor Set

Grade 2 – 45 People Task

SECURE MATERIAL - Reader Name: _____

Tennessee Comprehensive Assessment Program

Grade 2 Performance-Based Assessment

45 People Task

There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

Scoring Guide

The CCSS for Mathematical Content (1 point)

- 2.OA.A.1 Identifies the number of children.
(1 Point)

The CCSS for Mathematical Practice (3 points)

- MP1 Student work indicates understanding of how to use subtraction to solve the problem. Student attends to all parts of the tasks. **(1 Point)**
(MP1: Make sense of problems and persevere in solving them.)
- MP2 Abstracts the quantities from the situation, shows equations or diagram, and re-contextualizes the quantities. **(1 Point)**
(MP2: Reason abstractly and quantitatively.)
- MP4 Constructs an accurate diagram or equation. **(1 Point)**
(MP4: Model with mathematics.)

TOTAL POINTS: 4

The CCSS for Mathematical Content Addressed In This Task

Represent and solve problems involving addition and subtraction.

2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

The CCSS for Mathematical Practice*

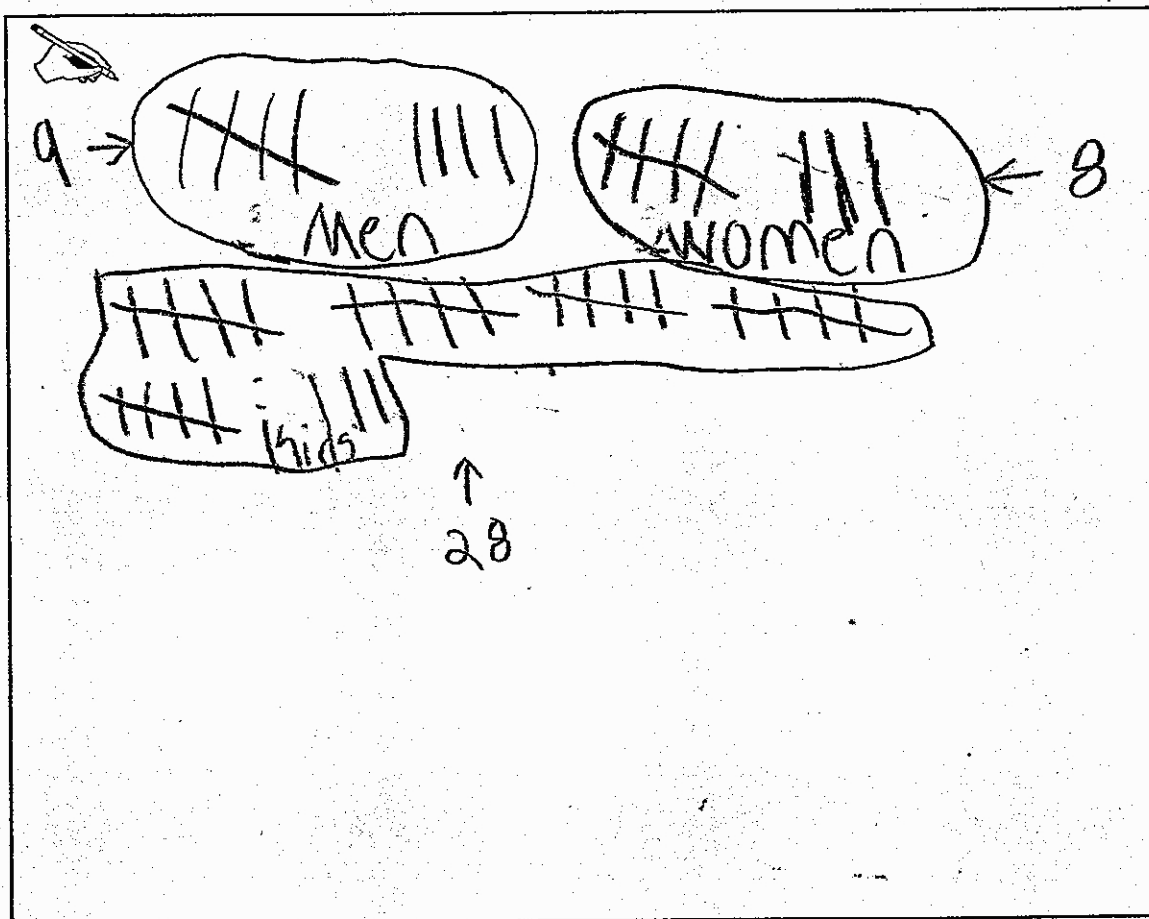
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics. expression
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.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

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

3. 45 People Task

There are 45 people at the park
There are 9 men.
There are 8 women.
The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.



Anchor 1 Litho 00422200011

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

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

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and a diagram with 45 tally marks divided into groups of 9, 8, and 28 is used to solve the problem, which indicates the student understands the relationship between the known and unknown parts and understands subtraction as an unknown addend problem (MP1). The student abstracts the quantities from the situation, as evidenced by the diagram, and re-contextualizes the answer by labeling 28 as the number of children (“Kids”) (MP2). The diagram is an accurate representation of the problem (MP4).

Total Awarded Points: 4 out of 4

3. 45 People Task

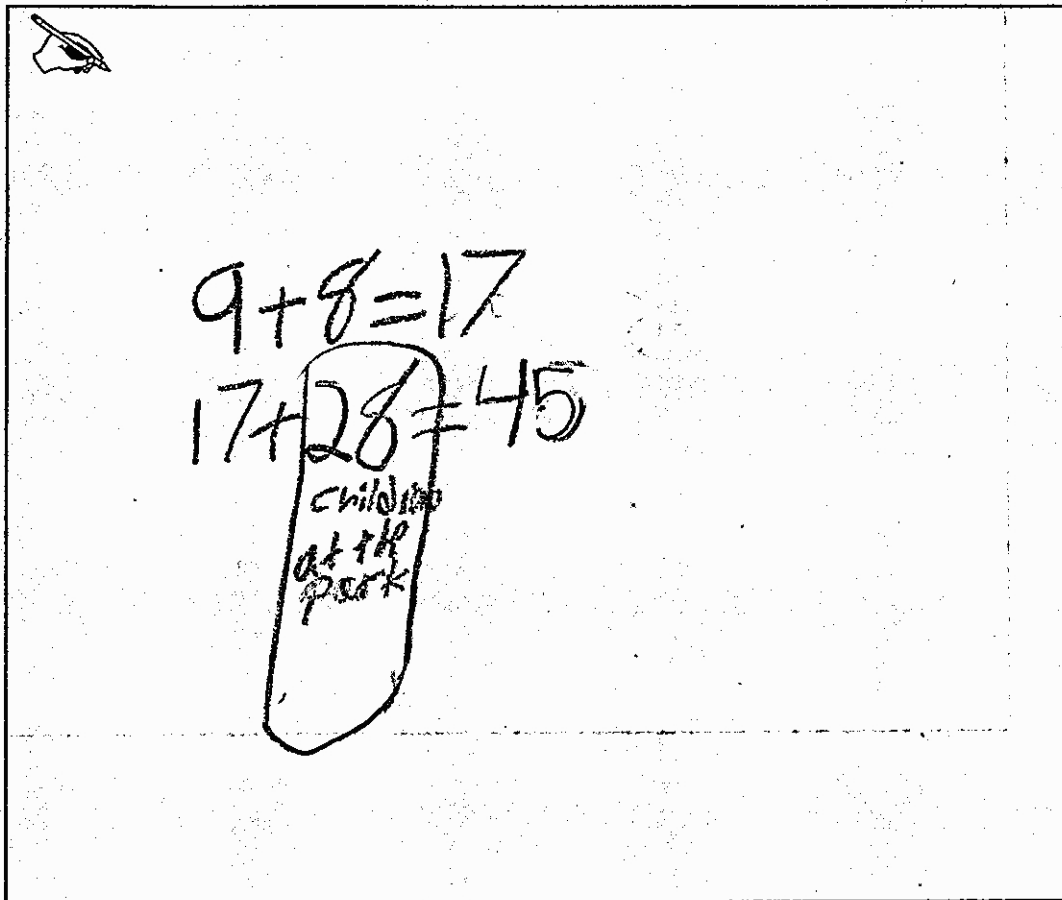
There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.



A handwritten solution for the 45 People Task. The solution consists of two equations and a circled answer. The first equation is $9 + 8 = 17$. The second equation is $17 + 28 = 45$. The number 28 is circled, and the text "children at the park" is written inside the circle. A small drawing of a hand holding a pencil is in the top left corner of the box.

Anchor 2

Litho 0001

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

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

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and an addition expression ($17 + 28$) is used to solve the problem, which indicates the student understands the relationship between the known and unknown parts and understands subtraction as an unknown addend problem (MP1). The student abstracts the quantities from the situation, as evidenced by both equations ($9 + 8 = 17$, $17 + 28 = 45$), and re-contextualizes the answer by labeling 28 as the number of children (MP2). The expressions ($9 + 8$) and ($17 + 28$) accurately represent the problem (MP4).

Total Awarded Points: 4 out of 4

3. 45 People Task

There are 45 people at the park.
There are 9 men.
There are 8 women.
The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

The diagram shows a hand-drawn solution. On the left, there is a small drawing of a hand holding a pencil. In the center, there is a vertical subtraction equation:
$$\begin{array}{r} 45 \\ - 9 \\ - 8 \\ \hline 28 \end{array}$$
 To the right of the equation, there are two vertical columns of circles. The first column contains 28 circles, and the second column contains 17 circles. To the right of the circles, there are several small drawings of people, some of which are crossed out with an 'X'.

Anchor 3 Litho 0046

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

Total Practice Points: 2 (MP1, MP4)

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and a diagram of 45 circles with 17 circles crossed off indicates an understanding of how to use subtraction to solve the problem (MP1). The student abstracts the quantities from the problem, as evidenced by the diagram, but does not re-contextualize the answer by labeling 28 as the number of children (no credit for MP2). Although the expression is incorrect ($45 - 9 - 8 - 1$), the diagram is an accurate representation of the problem (MP4).

Total Awarded Points: 3 out of 4

3. 45 People Task

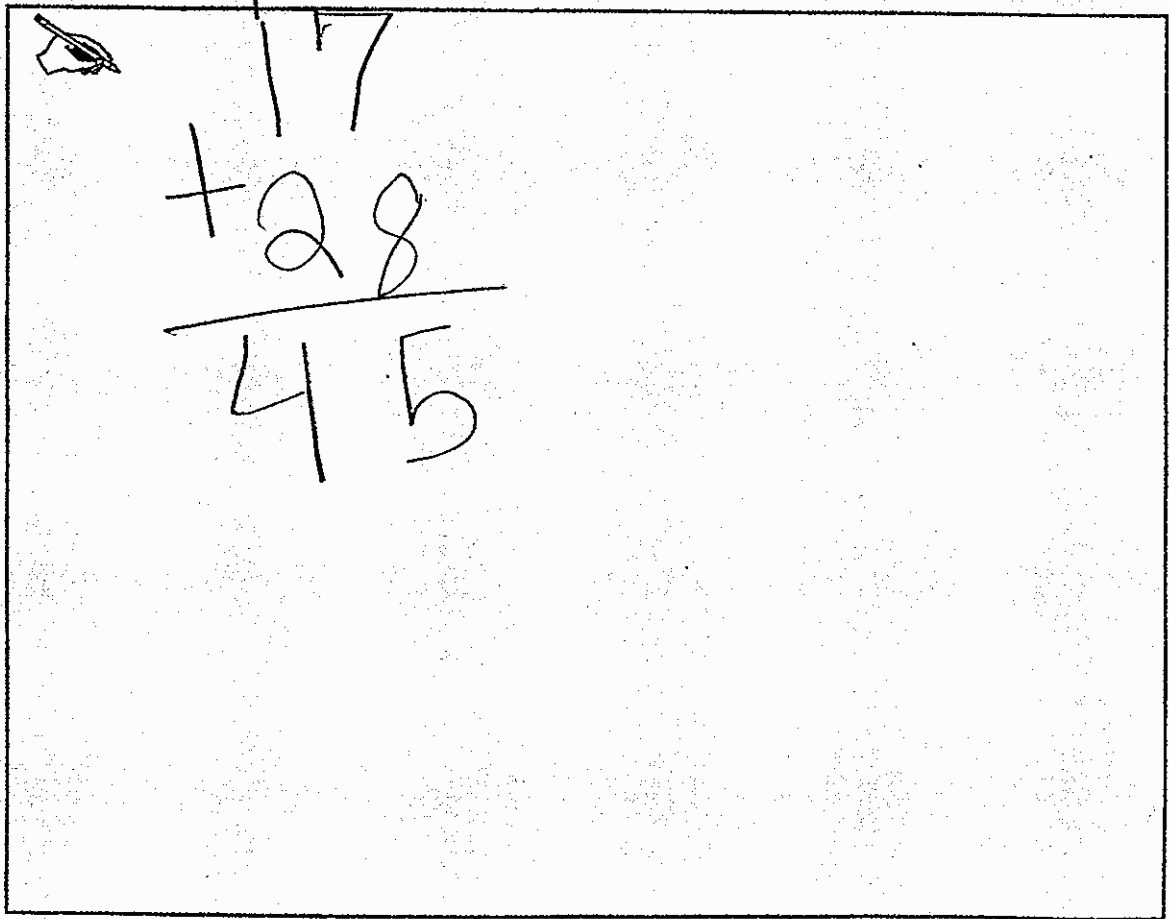
There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.



A handwritten subtraction problem is shown in a box. The problem is $45 - 17 = 28$. The numbers are written in a simple, hand-drawn style. A horizontal line is drawn under the 45. The number 17 is written above the 45, with a vertical line connecting the 1 to the 4 and another vertical line connecting the 7 to the 5. The result 28 is written below the horizontal line. In the top left corner of the box, there is a small drawing of a hand holding a pencil.

Anchor 4 Litho 0125

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

Total Practice Points: 2 (MP1, MP4)

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and an addition expression ($17 + 28$) is used to solve the problem, which indicates that the student understands the relationship between the known and unknown parts, and understands subtraction as an unknown addend problem (MP1). The student abstracts the quantities from the problem, as evidenced by the expression, but does not re-contextualize the answer by labeling 28 as the number of children (no credit for MP2). The expression ($17 + 28$) is an accurate representation of the problem (MP4).

Total Awarded Points: 3 out of 4

3. 45 People Task

There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

A hand-drawn diagram within a rectangular border. At the top left is a small drawing of a pencil. To its right, the number '28' is written in large, simple digits. Below the number, there are four rows of hand-drawn circles representing people. The first row contains 9 circles with facial features, representing men. The second row contains 8 circles with facial features and hair, representing women. The third and fourth rows each contain 10 simple circles, representing children. The total number of circles is 28.

Anchor 5 Litho 0130

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

Total Practice Points: 2 (MP1, MP4)

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and a diagram with 45 circles, 9 identified as men and 8 identified as women, indicates that the student understands how to use subtraction to solve the problem (MP1). The student abstracts the quantities from the situation, as evidenced by the diagram, but does not re-contextualize the answer by labeling either the number 28 or the 28 circles as the number of children (no credit for MP2). The diagram is an accurate representation of the problem (MP4).

Total Awarded Points: 3 out of 4

3. 45 People Task

There are 45 people at the park.
There are 9 men.
There are 8 women.
The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

The student's work is contained within a hand-drawn rectangular box. In the top-left corner, there is a small drawing of a pencil. The work is divided into several sections:

- Equation:** The equation $45 - 8 - 9 =$ is written. An arrow points from the equals sign to the right.
- Men:** The number "9" is written above the word "men". To the right, there are 9 stick figures representing men, arranged in two rows: 5 in the top row and 4 in the bottom row.
- Women:** The number "8" is written to the right of the subtraction equation. Below it, the word "women" is written with an arrow pointing to the right. To the right, there are 8 stick figures representing women, arranged in two rows: 5 in the top row and 3 in the bottom row.
- Subtraction Problem:** A vertical subtraction problem is shown in a box on the left side of the main work area:
$$\begin{array}{r} 45 \\ - 8 \\ - 9 \\ \hline 28 \end{array}$$

Anchor 6

Litho 0091

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

Total Practice Points: 2 (MP1, MP4)

The student correctly identifies the number of children as 28 (2.OA.A.1). The student attends to all parts of the task, and a subtraction expression ($45 - 8 - 9$) indicates that the student understands how to use subtraction to solve the problem (MP1). The student abstracts the quantities from the situation, as evidenced by the equation, but does not re-contextualize the answer by labeling 28 as the number of children (no credit for MP2). Although the diagram is incomplete, showing only the number of adults, the expression ($45 - 8 - 9$) is an accurate representation of the problem (MP4).


Total Awarded Points: 3 out of 4

3. 45 People Task

There are ~~46~~ people at the park.
There are 9 men.
There are 8 women.
The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

 $45 - 17 = 33$

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

Anchor 7

Litho 00462200011

Total Content Points: 0

Total Practice Points: 2 (MP1, MP4)

The student incorrectly identifies the number of children as 33 (no credit for 2.OA.A.1). The student attends to all parts of the task, and the use of a subtraction expression ($45 - 17$) indicates that the student understands how to use subtraction to solve the problem (MP1). The student abstracts the quantities from the situation, as evidenced by the expression, but does not re-contextualize the answer by labeling the answer as the number of children (no credit for MP2). Although the diagram is incorrect, illustrating only the student's answer of 33, the expression ($45 - 17$) is an accurate representation of the problem (MP4).

Total Awarded Points: 2 out of 4

3. 45 People Task

There are 45 people at the park.
 There are 9 men.
 There are 8 women.
 The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

The student's work is contained within a rectangular box. On the left side, there is a diagram of a person's head and shoulders. To its right, there are two subtraction equations:

$$\begin{array}{r} 45 \\ - 9 \\ \hline 36 \\ - 8 \\ \hline 28 \end{array}$$

The second equation is:

$$\begin{array}{r} 45 \\ - 17 \\ \hline 28 \end{array}$$

To the right of the equations is a large grid of circles. The top row consists of 15 circles, with the first 9 circles crossed out with an 'X'. Below this row are several rows of circles, some of which are also crossed out. At the bottom of the grid, there are several small circles, some of which are also crossed out, representing the remaining children.

Anchor 8

Litho 0006

Total Content Points: 0

Total Practice Points: 2 (MP1, MP4)

The student incorrectly identifies the number of children as 26 (no credit for 2.OA.A.1). The student attends to all parts of the task, and a diagram of 45 circles with 17 circles crossed off, as well as the expressions $45 - 9$ and $34 - 8$, indicate an understanding of how to use subtraction to solve the problem (MP1). The student abstracts the quantities from the situation, as evidenced by the diagram, but does not re-contextualize the answer as the number of children (no credit for MP2). Although the first equation ($45 - 9 = 34$) is incorrect, the diagram is an accurate representation of the problem (MP4).

Total Awarded Points: 2 out of 4

3. 45 People Task

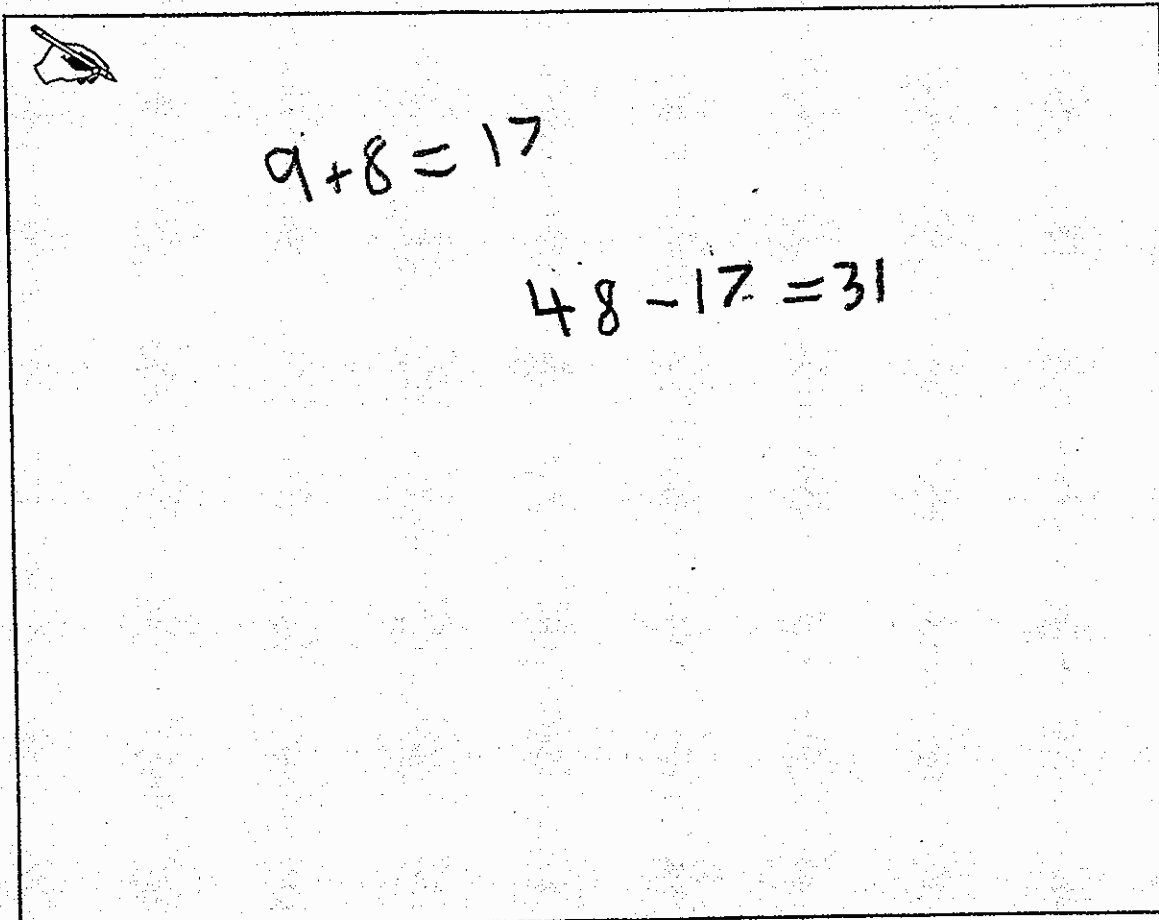
There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.



A hand-drawn solution for the 45 People Task. In the top left corner, there is a small drawing of a hand holding a pencil. The solution consists of two equations written in black ink:

$$9 + 8 = 17$$
$$45 - 17 = 28$$

Anchor 9

Litho 0102

Total Content Points: 0

Total Practice Points: 1 (MP1)

The student incorrectly identifies the number of children as 31 (no credit for 2.OA.A.1). The student attends to all parts of the task, and a subtraction expression ($48 - 17$) indicates that the student understands how to use subtraction to solve the problem (MP1). The student does not correctly abstract the quantities from the situation, as evidenced by the use of 48 rather than 45 in the expression, and does not re-contextualize the answer by labeling the answer as the number of children (no credit for MP2). The expression $48 - 17$ is not an accurate representation of the problem (no credit for MP4).

Total Awarded Points: 1 out of 4

3. 45 People Task

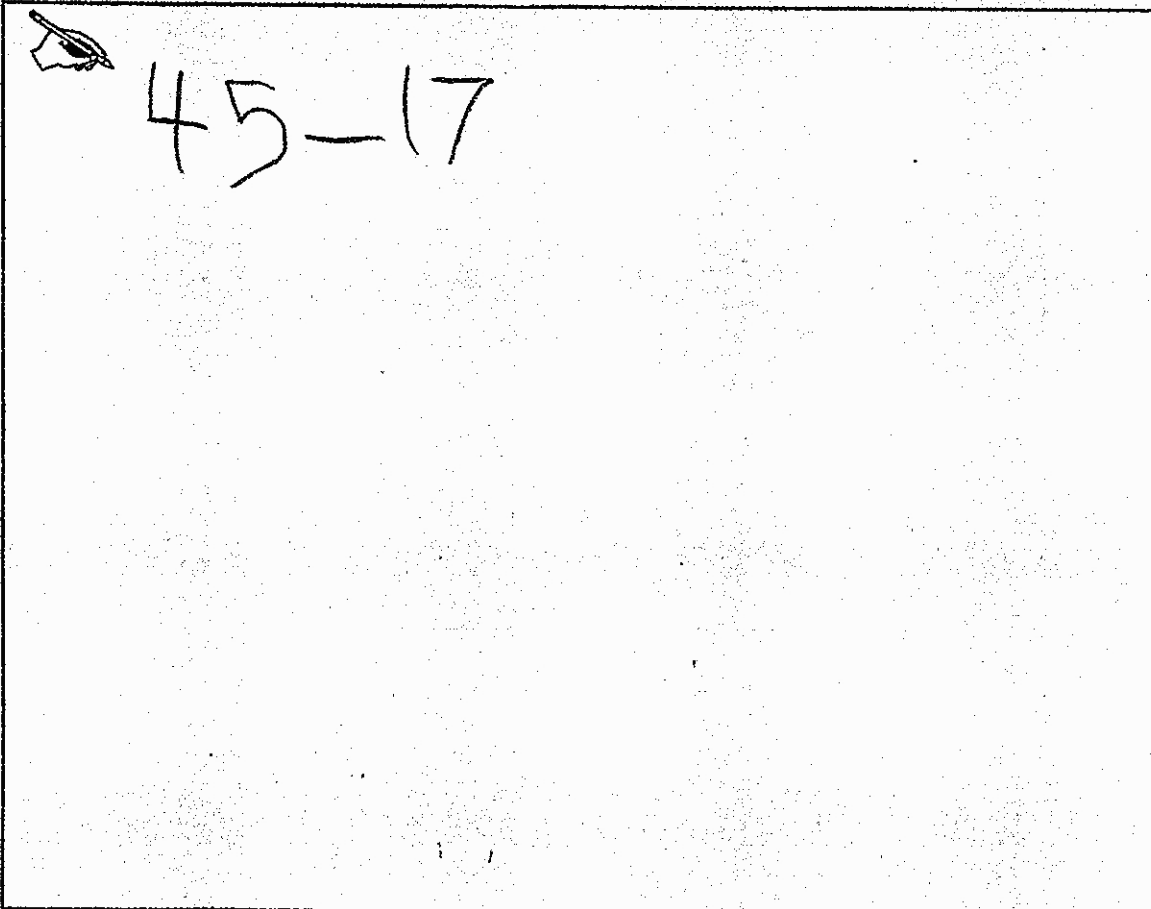
There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.



A large rectangular box containing a handwritten solution. In the top left corner, there is a small drawing of a hand holding a pencil. To the right of the drawing, the equation $45 - 17$ is written in black ink.

Anchor 10

Litho 0066

Total Content Points: 0

Total Practice Points: 1 (MP4)

The student does not identify the number of children (no credit for 2.OA.A.1). Although the expression $45 - 17$ indicates an understanding of how to use subtraction to solve the problem, the lack of a final answer indicates that the student did not attend to all parts of the task (no credit for MP1). The student abstracts the quantities from the situation, as evidenced by the expression $(45 - 17)$, but does not re-contextualize the answer by labeling an answer as the number of children (no credit for MP2). The expression $45 - 17$ is an accurate representation of the problem (MP4).

Total Awarded Points: 1 out of 4

3. 45 People Task

There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

Handwritten student work showing three equations:

$$\begin{array}{r} 9 \\ + 8 \\ \hline 17 \text{ children} \end{array}$$
$$\begin{array}{r} 8 \\ + 9 \\ \hline 17 \text{ children} \end{array}$$
$$8 + 9 = 17 \text{ children}$$
$$9 + 8 = 17 \text{ children}$$

Anchor 11

Litho 0002

Total Content Points: 0

Total Practice Points: 0

The student incorrectly identifies the number of children as 17 (no credit for 2.OA.A.1). The student neither attends to all parts of the task, since the expression $9 + 8$ represents only the first step in solving the problem, nor demonstrates an understanding of how to use subtraction to solve the problem (no credit for MP1). The student does not use the total of 45 when abstracting the quantities and incorrectly re-contextualizes the answer by labeling 17 as the number of children rather than as the number of adults (no credit for MP2). The expression $9 + 8$ represents only one step of the problem and is not an accurate representation of the problem (no credit for MP4).

Total Awarded Points: 0 out of 4

45
9
8
1

3. 45 People Task

There are 45 people at the park.

There are 9 men.

There are 8 women.

The rest are children.

How many children are at the park? Use a diagram or one or more equations to show how you figured out the number of children at the park.

The student's work is contained within a rectangular box. In the top-left corner, there is a small drawing of a hand holding a pencil. To the left of the main work, the numbers 45, 9, 8, and 1 are written vertically. The main work consists of a subtraction problem and a visual representation of people. The subtraction problem is written as follows:

$$\begin{array}{r} 45 \\ + 9 \\ \hline 8 \\ \hline 62 \end{array}$$

To the right of the subtraction problem, there are several rows of hand-drawn circles representing people. The first row has 10 circles, the second row has 10 circles, the third row has 10 circles, the fourth row has 10 circles, and the fifth row has 10 circles. A horizontal line is drawn under the first four rows. Below this line, there are two more rows of circles: the first row has 10 circles, and the second row has 10 circles. A second horizontal line is drawn under the second row of this section. The total number of circles is 50, which is 5 more than the 45 people mentioned in the problem.

Anchor 12

Litho 0120

Total Content Points: 0

Total Practice Points: 0

The student incorrectly identifies the number of children as 62 (no credit for 2.OA.A.1). The student attempts to attend to all parts of the task, but neither the expression $(45 + 9 + 8)$ nor the diagram indicates an understanding of how to use subtraction to solve the problem (no credit for MP1). The student incorrectly abstracts the quantities from the situation by indicating that 9 and 8 are not included among the 45 people and does not re-contextualize the answer by labeling 62 as the number of children (no credit for MP2). Neither the expression $(45 + 9 + 8)$ nor the diagram accurately represents the problem (no credit for MP4).

Total Awarded Points: 0 out of 4