New York State
Testing Program

2022

Mathematics Test

Grade 3

Scoring Leader Materials

Training Set

2-Point Holistic Rubric

2 Points	A 2-point response includes the correct solution to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding
1 Point	A 1-point response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task. This response • correctly addresses only some elements of the task • may contain an incorrect solution but applies a mathematically appropriate process • may contain the correct solution but required work is incomplete
0 Points*	A 0-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

3-Point Holistic Rubric

3 Points	A 3-point response includes the correct solution(s) to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding
2 Points	A 2-point response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task. This response • appropriately addresses most but not all aspects of the task using mathematically sound procedures • may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations • may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures
1 Point	A 1-point response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task. This response • may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete • exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning • reflects a lack of essential understanding of the underlying mathematical concepts • may contain the correct solution(s) but required work is limited
0 Points*	A 0-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

2022 2- and 3-Point Mathematics Scoring Policies

Below are the policies to be followed while scoring the mathematics tests for all grades:

1. If a student shows the work in other than a designated "Show your work" or "Explain" area, that work should still be scored.

2. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer space, the student should still receive full credit.

3. If students are directed to show work or provide an explanation, a correct answer with **no** work shown or **no** explanation provided, receives **no** credit.

4. If students are **not** directed to show work, any work shown will **not** be scored. This applies to items that do **not** ask for any work and items that ask for work for one part and do **not** ask for work in another part.

5. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.

6. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.

7. If the student provides more than one response, but does not indicate which response is to be considered the correct response and none have been crossed out, the student shall not receive full credit.

8. If the student makes a conceptual error (that is an error in understanding rather than an arithmetic or computational error), that student shall not receive more than 50% credit.

9. Trial-and-error responses are **not** subject to Scoring Policy #6 above, since crossing out is part of the trial-and-error process.

10. If a response shows repeated occurrences of the same conceptual error within a question, the conceptual error should **not** be considered more than once in gauging the demonstrated level of understanding.

11. In questions requiring number sentences, the number sentences must be written horizontally.

12. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.

13. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question but that work results in a score of zero.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

Answer _____ students

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?
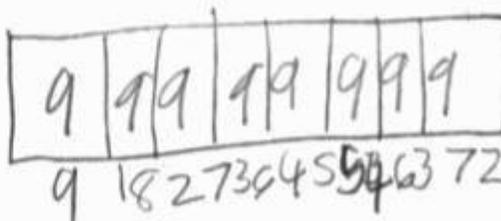
Show your work.

$24 + 23 + 25 = 72$

$72 \div 8 = 9$ students

or other valid process
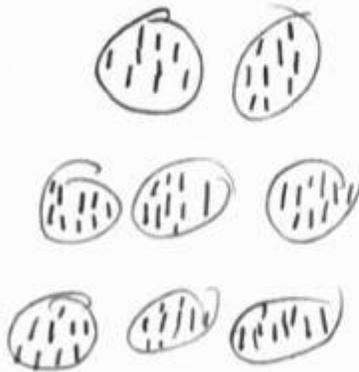
Answer _____9_____ students

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.
- Class B has 23 students.
- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

$$25$$
$$+24$$
$$\overline{49}$$
$$+23$$
$$\overline{72} \text{ students}$$

$$72 \div 8 = S$$

$$S = 9 \text{ students}$$

9	9	9	9	9	9	9	9

9 18 27 36 45 54 63 72

Answer ___9___ students

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total number of students is correctly calculated. A variable is used in the equation to determine the number of students per group, demonstrating a thorough understanding of the task. This response is complete and correct.

GUIDE PAPER 2

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.
- Class B has 23 students.
- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

$$\begin{array}{r} 3\cancel{2}4 \\ \cancel{2}3 \\ +\ 25 \\ \hline 7\cancel{2} \end{array}$$

Answer _____9_____ students

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total number of students is correctly calculated. The solution is determined using an appropriate process. This response is complete and correct.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

$24 + 23 + 25 = 72$ I make 8 circle and each one has 9
$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 72$

Answer | 9 student in each groups | students

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total number of students is correctly calculated. The work uses an appropriate method to determine the number of students in each group. This response is complete and correct.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

$$72 \div 8 = \underline{7}$$

$$8 \times \underline{7} = 72$$

$$\begin{array}{r} 24 \\ +23 \\ \hline 4\,7 \\ +25 \\ \hline 72 \end{array}$$

② $\begin{array}{r} 16 \\ \times 2 \\ \hline 32 \end{array}$

④ $\begin{array}{r} 16 \\ \hline 48 \end{array}$

⑥ $\begin{array}{r} 16 \\ \hline 64 \end{array}$

⑦ $\begin{array}{r} 8 \\ \hline 72 \end{array}$

Answer _____**7**_____ students

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total number of students is correctly calculated; however, a calculation error occurs when obtaining the number of students per group. This response contains an incorrect solution but applies a mathematically appropriate process.
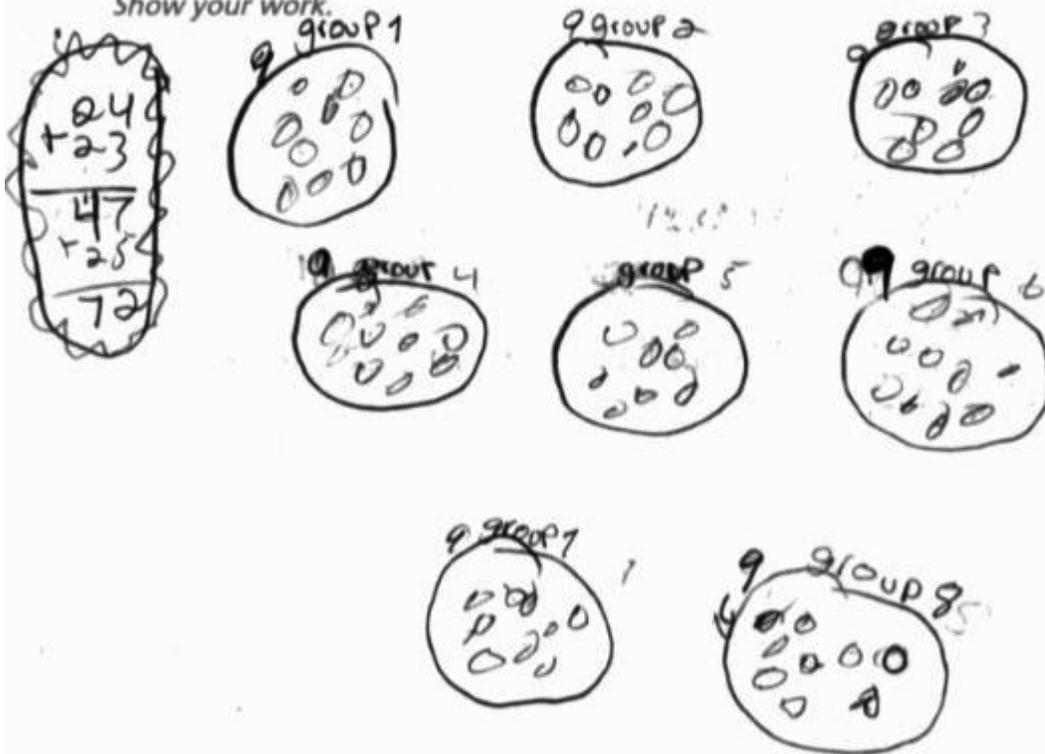
GUIDE PAPER 5

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.
- Class B has 23 students.
- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

Answer ___72___ students

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total number of students and the number of students per group are both calculated correctly in the work; however, an incorrect solution is provided as the answer. This response contains an incorrect solution but applies a mathematically appropriate process.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.

$$24+23+25=72$$

Answer | 9 students | students

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total number of students is correctly calculated. The step to determine the number of students per group is not shown. This response contains the correct solution but the required work is incomplete.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.

- Class B has 23 students.

- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?
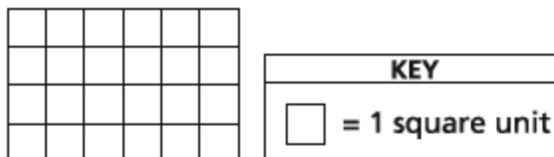
Show your work.

$$\begin{array}{r} 25 \\ +8 \\ \hline 33 \end{array}$$

Answer __33__ students

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. An incorrect solution is obtained using an obviously incorrect procedure.

34

Three classes are on a field trip at the zoo. The number of students in each class is listed below.

- Class A has 24 students.
- Class B has 23 students.
- Class C has 25 students.

At the zoo, all the students are placed into 8 equal groups. How many students are in each group?

Show your work.
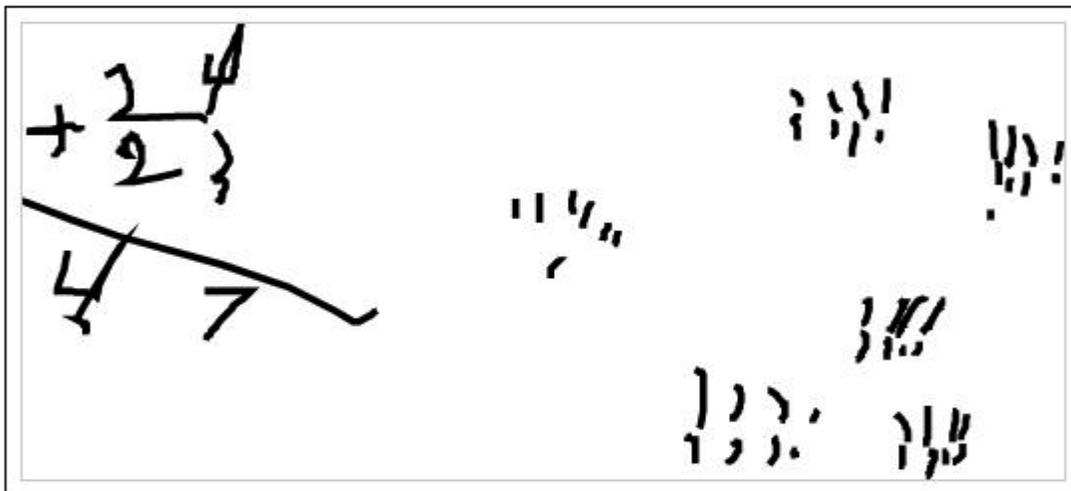
Answer 8 students

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The sum of the students in Class A and B is obtained; however, no attempt is made to add Class C to obtain the total number of students. There is an attempt to create groups, but errors are made. Some elements of the response are mathematically appropriate procedures, but holistically it is not sufficient.

35

A figure is shown below.

KEY
☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

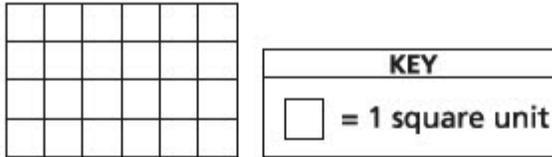**Show your work.**

Answer _____ square units

EXEMPLARY RESPONSE

35

A figure is shown below.

	KEY
▢	= 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?
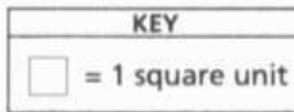
Show your work.

$4 \times 6 = 24$

$24 + 6 = 30$

or

$5 \times 6 = 30$ square units

or other valid process

Answer _____30_____ square units
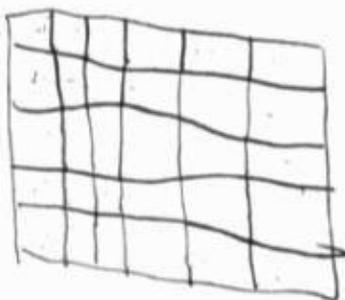
35

A figure is shown below.

	KEY
	☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

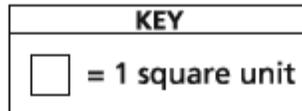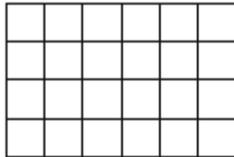$$6 \times 5 = 30$$

Answer _____30_____ square units

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The figure is redrawn with one additional row added, and the correct solution is obtained through multiplication. This response is complete and correct.

GUIDE PAPER 2

35

A figure is shown below.

	KEY
	☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$$\begin{array}{r} 4 \\ \times\ 6 \\ \hline \end{array}$$ 24 sq units $$\begin{array}{r} 24 \\ +\ 6 \\ \hline \end{array}$$ 30 sq units
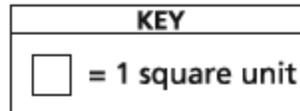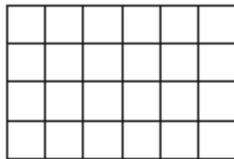
Answer 30sq units   square units

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total area of the original figure and the addition of the extra row are correctly calculated. This response is complete and correct.

35

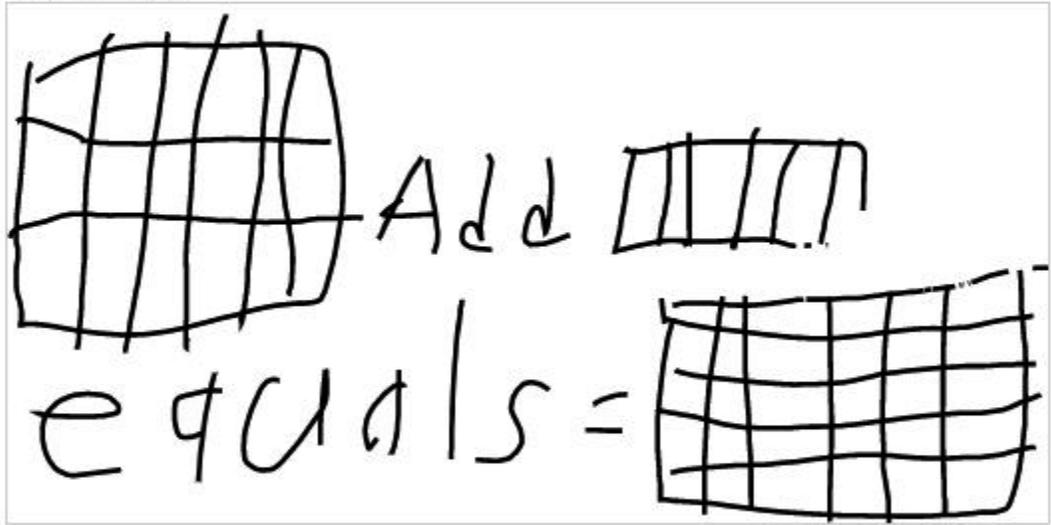A figure is shown below.

KEY
☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$5 \times 6 = 30$

Answer | the answer is thirty i got it from doing 5x6=30 thats how igot my answer. | square units
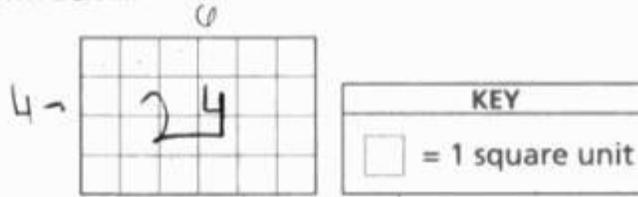

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total area of the new figure is correctly calculated. Although an error is made in recreating the original figure, this is considered inconsequential, as the work present is sufficient to demonstrate a thorough understanding.

35

A figure is shown below.

6

$4 \rightarrow$ 24

KEY
$\square$ = 1 square unit

C
A
S

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$4 \times 6 = 24$

$6 + 6 = 12$

$6 + 6 = 12$ / $\frac{12}{24}$

Answer ____24____ square units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total area of the original figure is correctly calculated; however, no attempt is made to calculate the area of the new figure. This response correctly addresses only some elements of the task.

GUIDE PAPER 5

35

A figure is shown below.

KEY

□ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$$
\begin{array}{r}
+\ 24 \\
66 \\
\hline
30
\end{array}
$$

Answer ___26___ square units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total area of the new figure is correctly calculated; however, an incorrect solution is provided. This response contains an incorrect solution but applies a mathematically appropriate process.

35

A figure is shown below.

KEY
☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$5 \times 6 = 30$
$1 \times 6 = 6$
$30 + 6 = 36$

If one more row was added the area would be 36 sq un.
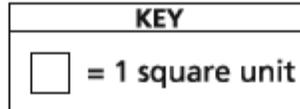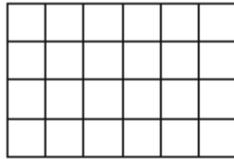
Answer _____ square units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The number of rows in the original figure is misunderstood; however, an appropriate procedure is used to obtain the total area of the new figure. This response contains an incorrect solution but applies a mathematically appropriate process.
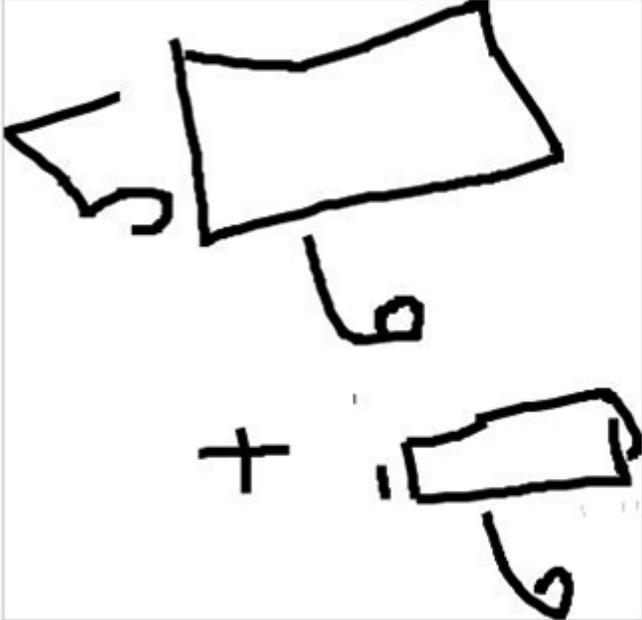
35 A figure is shown below.
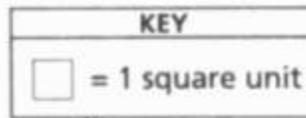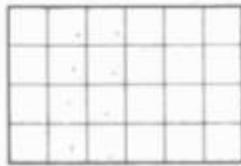
One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

Answer ___30___ square units

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The correct solution is provided, but there is no supporting work. Per Scoring Policy #3, this response cannot receive credit.

35

A figure is shown below.
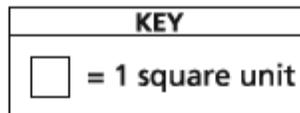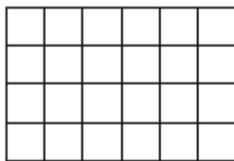
KEY
☐ = 1 square unit

One more row of 6 unit squares is added to the figure. What is the total area of the new figure after the unit squares are added?

Show your work.

$4 \times 6 \times 6 = 40$ because $6 \times 6 = 36$ and $36 + 4 = 40$ so it would be 40 sq.un.

Answer 40   square units

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. An incorrect solution is obtained using an incorrect procedure.

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

_____

_____

_____

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

As seats are ordered in groups of 10, the number of seats ordered has to be divisible by 10. Because 267 is greater than 260, I have to round 267 up to the next number divisible by 10. So, the least number of seats the manager should order is 270 seats, or 27 groups of 10 seats.

or other valid explanation

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

> I think the manager should order 270 new seats so that if 3 new people come they got seats also counting by 10s you cant even get to 267.
> 10 20 30 40 50 60 70 80 90 100 110120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The correct solution is obtained by skip counting, and a valid explanation is provided demonstrating the need for groups of 10 and acknowledging the remainder of 3. This response is correct and complete.

GUIDE PAPER 2

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

The manager should get 27 because the two hundreds make 20 seats the 60 makes 6 seats so... 20+6=226 and ⓪ rounded to the nearest ten. is ten and 26+1=27

$$267 \div 10 =$$

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The correct solution is obtained rounding up to the nearest 10, by first rounding to 26, and then demonstrating a need to round up to 27. This response is correct and complete.

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

He would have to bye 27 boxes because you can't round the down so you would have to round it up to 270 and bye 27 boxes.

$$267 \approx 270 \div 10 = 27$$

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The correct solution is obtained, and a valid explanation is provided to support the solution. This response is complete and correct.

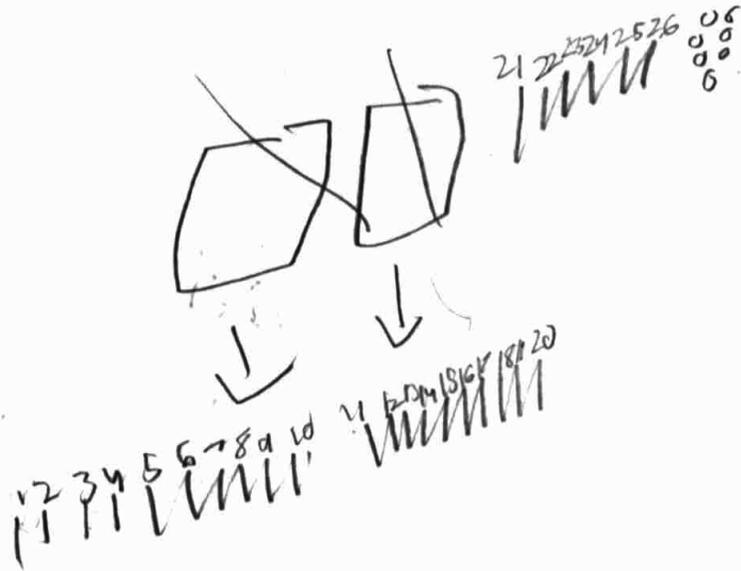**36**

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

he cowld buy 270 and
hot use 3 of the new seats.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The correct solution is provided along with a remainder; however, the explanation is not sufficient. This response correctly addresses only some elements of the task.

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

$267 \div 10 = 26R7$
10,20,30,40,50,60,70,80,90,100,110,120,130,140,150,160,170,180,190,200,210, 220,230,240,250,260,
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

the laast nuber of seats is 7

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Some understanding of groups of 10 is shown; however, an incorrect solution is obtained. This response correctly addresses only some elements of the task.

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the least number of seats that the manager should order?

Explain how you know your answer is correct.

I know I am correct because I first made the 7 a zero and then divided 10 from 260 and got 26 groups.

267 seats

260 ÷ 10 = 26 gronps

The least number of seats he should order is 26 groups.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total number of seats after being rounded down is correctly divided by 10; however, an incorrect solution is given, as they did not take into account the 7 additional seats. This response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 7

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

$$267 \div 10 = 134$$

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Although the number of seats is correctly set up to be divided by 10, a calculation error occurs, and no further explanation is provided.

36

The manager at a movie theater needs to order 267 new seats. If the seats are sold only in groups of 10, what is the **least** number of seats that the manager should order?

Explain how you know your answer is correct.

becaus   you can Count by tens

100 Seats

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

```
+ 10, 70
  20, 70

+ 70
  40
 ---
  70
```

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Although skip counting by tens is attempted, it stops at 100. The explanation does not sufficiently address the task to demonstrate comprehension.

37

Sam needs to solve the problem shown below.

$$\underline{\quad ? \quad} \times 7 = 63$$

He uses the equation $63 \div 7 = \underline{\quad ? \quad}$ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

_____

_____

_____

37

Sam needs to solve the problem shown below.

$$\underline{\ ?\ } \times 7 = 63$$

He uses the equation $63 \div 7 = \underline{\ ?\ }$ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

Yes, Sam's process will work because both equations represent a total of 63 separated into 7 equal groups and obtaining the quotient of a division problem is equivalent to obtaining the missing factor in a multiplication problem.

or other valid explanation

37

Sam needs to solve the problem shown below.

_?_ × 7 = 63

He uses the equation 63 ÷ 7 = _?_ to find the unknown number. <u>Will this process help Sam solve the problem?</u>

Explain how you know your answer is correct.

Yes, because 63 ÷ 7 = <u>9</u> so multiply
7×9 = 63 or add 7 9 times. I know
because I solved the problem already.

Cubes

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The response references the inverse properties of multiplication and division, and an additional method of determining the answer is provided. This response is complete and correct.

37

Sam needs to solve the problem shown below.

___?___ × 7 = 63

He uses the equation 63 ÷ 7 = __?__ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

Yes this proccess will because divison is multipcation but bachwards. You use the big number.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The response references the inverse properties of multiplication and division, and an additional method of skip counting is used to explain the correct answer. This response is complete and correct.

37

Sam needs to solve the problem shown below.

_?_ × 7 = 63

He uses the equation 63 ÷ 7 = _?_ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

Yes, because if you divid 7 from 63 than the answer multiplyed by 7 is equal to 63.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The response references the inverse properties of multiplication and division. The unknown number is not provided, which is acceptable. The phrase "*you divide 7 from 63*" is incorrect language, but in context is understood to mean 63 divided by 7. This response is complete and correct.

GUIDE PAPER 4

37

Sam needs to solve the problem shown below.

$\underline{\ ?\ } \times 7 = 63$

He uses the equation $63 \div 7 = \underline{\ ?\ }$ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

yes because a mutiplica
question Backwards and with
a divisonbyda Helps you
find it out

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A true statement is made concerning the inverse relationship of multiplication and division. However, specifics are not provided that would explain why this process is correct for this question. This response correctly addresses only some elements of the task.

37

Sam needs to solve the problem shown below.

_?_ × 7 = 63

He uses the equation 63 ÷ 7 = _?_ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

yes it will because 8 × 7 = 63 and 63 ÷ 7 = 8 and the anwser is 8

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The relationship between the given equations is clearly explained; however, the explanation contains a calculation error. This response correctly addresses only some elements of the task.

37

Sam needs to solve the problem shown below.

$$\underline{\ ?\ } \times 7 = 63$$

He uses the equation $63 \div 7 = \underline{\ ?\ }$ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

$$63 \div 7 = 9$$

I tok 63 ÷ 7 = 9.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The unknown number in the given problem is calculated; however, the explanation does not address the inverse nature of division and multiplication. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

37

Sam needs to solve the problem shown below.

___?___ × 7 = 63

He uses the equation 63 ÷ 7 = ___?___ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

It we because the answe
of 63÷7=7 is the missin
number for 7X7=63,

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The answer is not clearly stated, and the explanation is insufficient to explain why the two methods are valid.
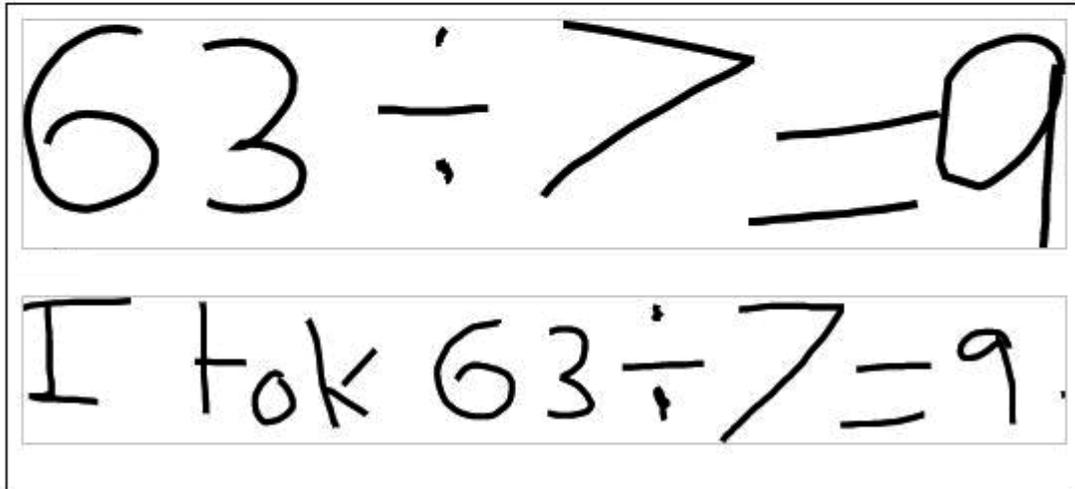
37

Sam needs to solve the problem shown below.

$$\underline{\quad?\quad} \times 7 = 63$$

He uses the equation $63 \div 7 = \underline{\quad?\quad}$ to find the unknown number. Will this process help Sam solve the problem?

Explain how you know your answer is correct.

9

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The unknown number in the equations is provided; however, the response has no explanation. See Scoring Policy #3.
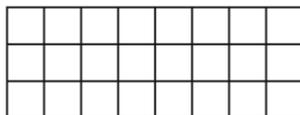
38

The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

38

The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

$3 \times 8 = 24$ and $8 + 8 + 8 = 24$

$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24$ square units

or other valid process

38

The figure shown below is made up of unit squares.

	KEY
□	= 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

$8 + 8 + 8 = 24$

$3 \times 8 = 24$

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The addition and multiplication equations provided to calculate the area of the figure are correct. This response is complete and correct.

GUIDE PAPER 2

38

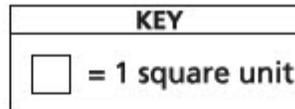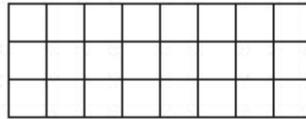The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation and one multiplication equation that can be used to find the area of the figure.

Show your work.

multipulacation = 24 x 1 = 24 un

1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1

1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 24 un

16 + 8 = 24

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The addition and multiplication equations provided to calculate the area of the figure are correct. This response is complete and correct.

Page 47

38

The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

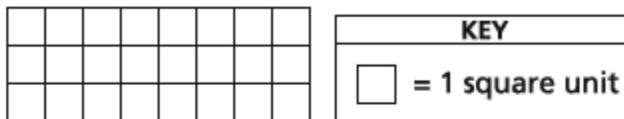3 × 8=m m=24
15+9=24
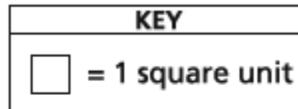

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The addition and multiplication equations provided to calculate the area of the figure are correct. The addition reflects a partitioning of the figure into smaller portions, which is acceptable. This response is complete and correct.

GUIDE PAPER 4

38

The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

$$3 \times 8 = \frac{?}{}$$
or ↓
$$3+3+3+3+3+3+3+3=\underline{?}$$

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the addition and multiplication equations provided to calculate the area of the figure are correct, both equations are left unsolved. This response correctly addresses only some elements of the task.

38

The figure shown below is made up of unit squares.

KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

$3 \times 8 = 24$
$16 + 6 = 22$
$3 + 3 = 6$
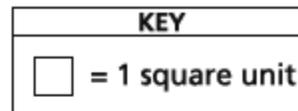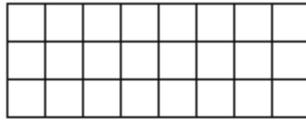$8 + 8 = 16$

I took 3 × 8 = 24 and
16 + 6 = 22.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct multiplication equation is provided to obtain the area of the figure. However, the addition equation calculates the perimeter of the figure, not the area. This response correctly addresses only some elements of the task.

GUIDE PAPER 6

38

The figure shown below is made up of unit squares.

	KEY
	☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

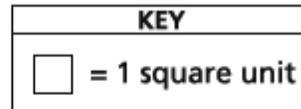**Show your work.**

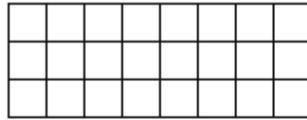$3 \times 8 = 24$ and $24 \div 3 = 8$.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct multiplication equation is provided to obtain the area of the figure. However, the other equation uses division instead of addition. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

38

The figure shown below is made up of unit squares.
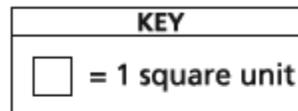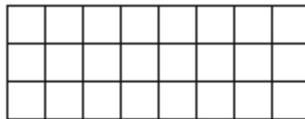
KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.

$3 \times 4 = 24$ $4 + 4 + 4 = 24$

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Although both an addition and a multiplication equation are provided, both equations contain calculation errors, do not relate to the figure, and incorrectly address the task.

38

The figure shown below is made up of unit squares.
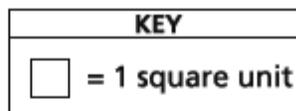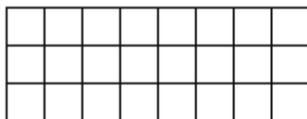
KEY
☐ = 1 square unit

Write and solve one addition equation **and** one multiplication equation that can be used to find the area of the figure.

Show your work.
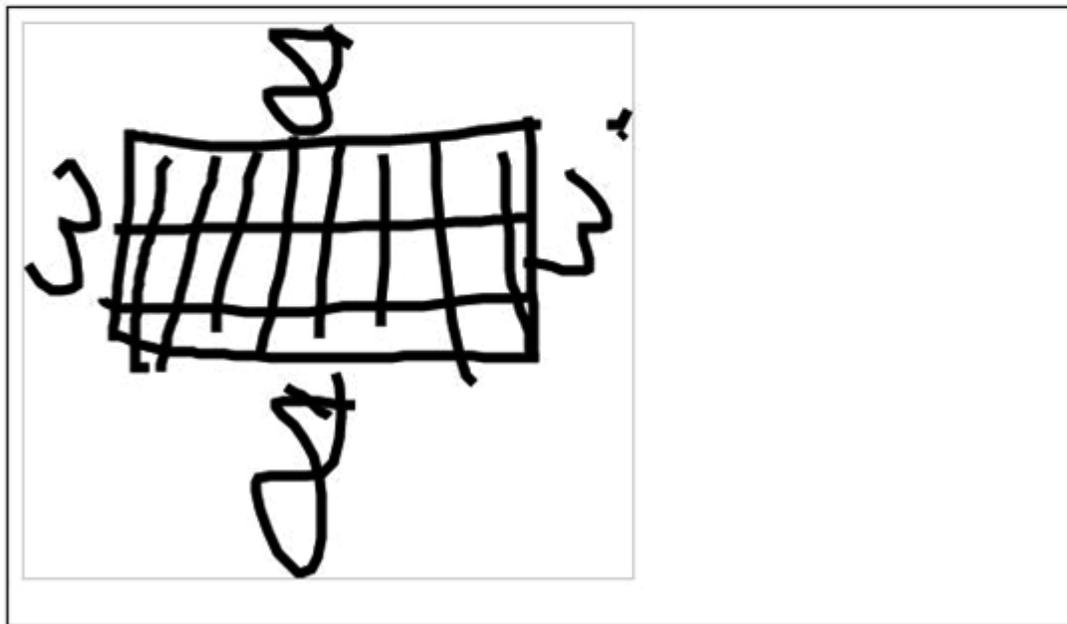
Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The lengths of the figure's sides are determined, but this is not sufficient for credit as an addition and multiplication equation are not written, and the area is not calculated.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure to include what you know about fractions in your answer.

Explain how you know your answer is correct.

_____

_____

_____

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure to include what you know about fractions in your answer.

Explain how you know your answer is correct.

⅔ is greater than ⅜ because ⅓ is one whole and ⅜ is less than a whole.

or

Any fraction with a numerator of 3 and a denominator less than 8 and greater than 0, with a valid explanation

or other valid explanation

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure

to include what you know about fractions in your answer.

Explain how you know your answer is correct.

> $\frac{3}{4}$ because 4 is less than eight and if you split a cookie into eights the
>
> peices would be smaller than if it was split into 4ths

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The provided fraction is correct, and the explanation correctly describes why the provided fraction is greater by comparing the denominators. This response is complete and correct.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure

to include what you know about fractions in your answer.

Explain how you know your answer is correct.

> $\frac{3}{7}$ is greater because if the numerator is the same the fraction with the
>
> smaller denomenator is bigger.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The provided fraction is correct, and the explanation correctly describes why the provided fraction is greater by comparing the denominators. This response is sufficient to demonstrate a thorough understanding.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure

to include what you know about fractions in your answer.

Explain how you know your answer is correct.

> Three thirds is greater than three eights because tree thirds is equal to one whole.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The provided fraction is correct, and the explanation correctly states that ⅔ is equal to one whole, and greater than ⅜. This response is sufficient to demonstrate a thorough understanding.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure to include what you know about fractions in your answer.

Explain how you know your answer is correct.

$\frac{3}{3}$ are greater Because the s the Demonater the Bigger it is.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct fraction is written, and it is stated that "⅜ *are greater*"; however, the explanation is not sufficient. This response correctly addresses only some elements of the task.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure to include what you know about fractions in your answer.

$$\frac{3}{7}$$

Explain how you know your answer is correct.

I know that my answer is correct beacuse if it is 8 You have to count back ones.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct fraction is written; however, the explanation is not sufficient. This response correctly addresses only some elements of the task.

GUIDE PAPER 6

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure

to include what you know about fractions in your answer.

Explain how you know your answer is correct.

$\frac{3}{4}$ because the closer the numbers are the bigger the fraction.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct fraction is given with the correct assessment that ¾ is greater; however, the explanation is vague and does not sufficiently compare the two fractions. This response correctly addresses only some elements of the task.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure to include what you know about fractions in your answer.

Explain how you know your answer is correct.

$\frac{3}{12} > \frac{3}{8}$ 3 and 3 is the same thing but 12 and 8 is not and 12 is bigger than 8.

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The fraction ³⁄₁₂ is not greater than ⅜. Response is incorrect, using an incorrect procedure.

39

Write a fraction that has a value greater than $\frac{3}{8}$ using 3 as the numerator. Be sure

to include what you know about fractions in your answer.

Explain how you know your answer is correct.

> 3\8 is a part of the hole.
> I know it is correct because3\8 is a part of the hole.

Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. While it is true that ⅜ is part of a whole, no new fraction with a 3 as the numerator is provided. This response is not sufficient for any credit, as it does not address the task.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

Answer _____ days

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

X X X X   X X X

X X X X   *or*   X X X

X X X X   X X X

                 X X X

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$20 \div 4 = 5$

or other valid process

Answer _____5_____ days

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

```
×  ×  ×  ×
×  ×  ×  ×
×  ×  ×  ×
= 12 miles.
( )
```

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

Selena willneed to run 5 days because $4 \times 5 = 20$.

Answer 5 days

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. A correct array is provided to represent the total number of miles, and the number of days needed is calculated correctly using multiplication. This response is complete and correct.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

Its Multiplication Because
4X3= 12

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

4x5= 20

For 4 Miles
A Day selena
will run 4 miles
for 5 Days.

Answer _____5_____ days

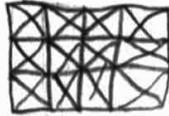### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. A correct array is provided to represent the total number of miles, and the number of days needed is calculated correctly using drawing and multiplication. This response is complete and correct.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$$20 \div 4 = 5$$

Answer | Selena needs to run for 5 days in order to run 20 miles. | days

---

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. A correct array is provided to represent the total number of miles, and the number of days needed is calculated correctly through division. This response is complete and correct.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.
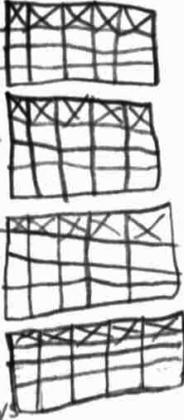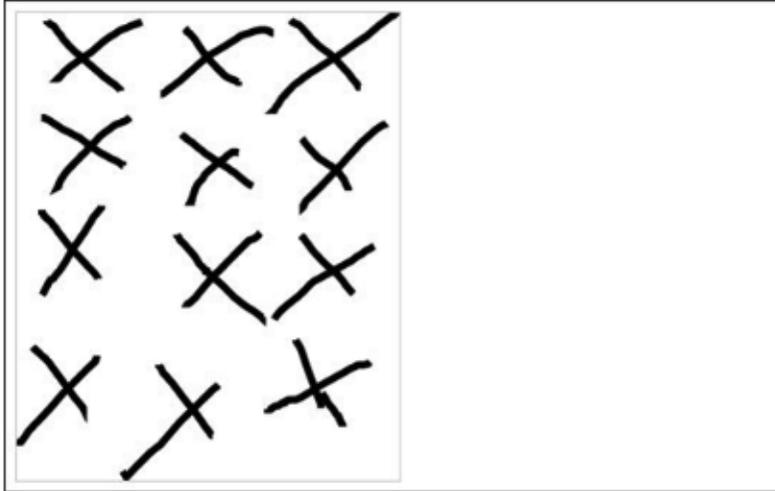
Show your work.

$$\begin{array}{r} 4 \\ \times\ 3 \\ \hline 12 \end{array}$$

12

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

mon   tuse   wed   thur
4   8   12   16

fri
20

Answer _____ days

5

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. No array is provided; however, the total number of miles is calculated correctly. The number of days needed is calculated correctly through a series of multiples of 4. This response appropriately addresses most but not all aspects of the task using mathematically sound procedures.
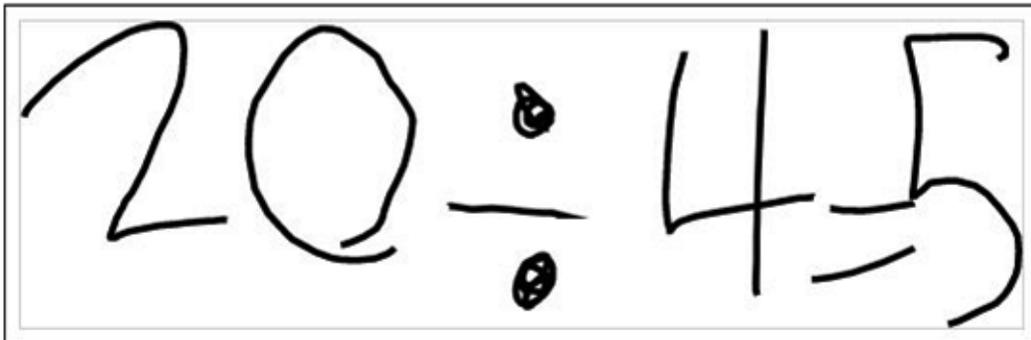
40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

$4 \times 3 = 12$

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$20 \div 4 = 5$

Answer | 5 miles | days

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. Although the written equation correctly solves for the total number of miles, an array using X is not provided. The total number of miles is calculated correctly, and the number of days needed is calculated correctly through division. This response appropriately addresses most but not all aspects of the task using mathematically sound procedures.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

M
T
W
th
= Shcoon X Last week.

x=5

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

20 ÷ 4 = 5 DAYS

Answer _____5_____ days

Score Point 2 (out of 3 points)
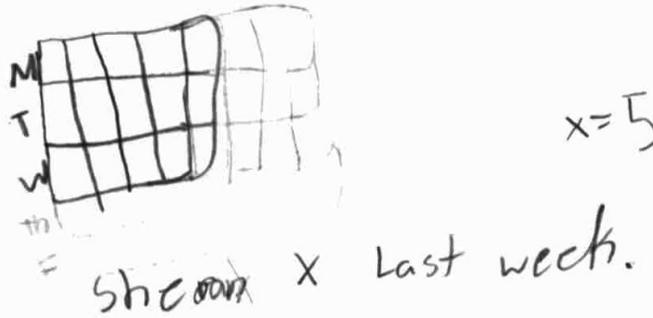
This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The box array provided is incorrect, as it is 3×5, rather than 3×4. The number of days needed is calculated correctly through division. This response appropriately addresses most but not all aspects of the task using mathematically sound procedures.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$$\times \begin{array}{r} 7 \\ 4 \\ \hline 11 \end{array}$$

Answer | 12 | days

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. A correct array is provided to represent the total number of miles. However, an incorrect procedure is used to obtain an incorrect number of days remaining. This response addresses some elements of the task correctly but reaches an inadequate solution and provides reasoning that is faulty.

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

total = 12 Square units

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

4   She would need 16 more to get there

Answer 16 days

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. Boxes are provided for an array in place of the Xs to represent the total number of miles, which is acceptable as the array is accurately depicted. The remaining number of miles after the first day is calculated and incorrectly provided as a solution. This response reflects a lack of essential understanding of the underlying mathematical concepts.

GUIDE PAPER 9

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

$$\times \quad \times \quad \times$$
$$\times \quad \times \quad \times$$
$$\times \quad \times \quad \times$$

$$4 \times 3 = 12$$

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$$12 + ? = 20$$

Answer | she will need to run for 8 days. | days

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. An incorrect array is provided; however, the total number of miles is correctly calculated using the equation. The remaining number of miles is calculated and is incorrectly provided as a solution. This response reflects a lack of essential understanding of the underlying mathematical concepts.

Page 74

40

Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

$$4+4+4 = 12$$

or

$$3 \times 4 = 12$$

or get an answer

$$12 \div 4 = 3$$

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

$$12+8=20$$

Answer _____2_____ days

Score Point 0 (out of 3 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The number of miles run last week is obtained using multiplication; however, an array using the symbol X is missing. An incorrect equation is used for the number of days, resulting in an incorrect solution. Holistically, although some elements contain correct mathematical procedures, this response is not sufficient to receive credit.

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Selena is training for a race. Last week, she ran 4 miles each day on 3 different days. Use the symbol X to make an array that represents the total number of miles Selena ran last week.

Show your work.

```
  ×  ×  ×  ×
×  ×  ×  she ran 12 on that week
```

This week, Selena plans to run a total of 20 miles. If she runs 4 miles each day, how many days will she need to run this week?

Show your work.

```
×  ×  ×  ×   ×  ×  ×  ×   ×  ×  ×  ×   ×  ×  ×  ×   ×  ×  ×
  she will need  to run 5 this week
```

Answer | 60 days | days

Score Point 0 (out of 3 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Several arrays are present in the response, but none of them correctly represent the total number of miles. The number of days needed is stated in the work area; however, there is no correct supporting work, and an incorrect solution is provided. Holistically, this response does not adequately address the task.