New York State Testing Program
Mathematics Test

2013 Turnkey Training

Rubrics, Scoring Policies and
Practice Score Sheet

2-Point Holistic Rubric

Score Points:

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

<u>Condition Code A</u>

Condition Code A is applied whenever a student who is present for a test session leaves an <u>entire</u> open-ended item in that session blank (no response).

Mathematics Scoring Policies

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

1. If a student does the work in other than a designated "Show your work" area, that work should still be scored. (Additional paper is an allowable accommodation for a student with disabilities if indicated on the student's Individualized Education Program or Section 504 Accommodation Plan.)

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 blank, the student should still receive full credit.

3. If the question requires students to show their work, and the student shows appropriate work and arrives at the correct answer but writes an incorrect answer in the answer blank, the student should not receive full credit.

4. In questions that provide ruled lines for students to write an explanation of their work, mathematical work shown elsewhere on the page should be considered and scored.

5. If the student provides one legible response (and one response only), teachers 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, teachers should score only the response that has not been crossed out.

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

8. If a response shows repeated occurrences of the same conceptual error within a question, the student should not be penalized more than once.

9. In questions that require students to provide bar graphs,

   - in Grades 3 and 4 only, touching bars are acceptable

   - in Grades 3 and 4 only, space between bars does not need to be uniform

   - in all grades, widths of the bars must be consistent

   - in all grades, bars must be aligned with their labels

   - in all grades, scales must begin at 0, but the 0 does not need to be written

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

11. In pictographs, the student is permitted to use a symbol other than the one in the key, provided that the symbol is used consistently in the pictograph; the student does not need to change the symbol in the key. The student may not, however, use multiple symbols within the chart, nor may the student change the value of the symbol in the key.

12. 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.

3-Point Holistic Rubric

Score Points:

3 Points	A three-point response answers the question correctly. This response • demonstrates a thorough understanding of the mathematical concepts but may contain errors that do not detract from the demonstration of understanding • indicates that the student has completed the task correctly, using mathematically sound procedures
2 Points	A two-point response is partially correct. This response • demonstrates partial understanding of the mathematical concepts and/or procedures embodied in the task • addresses most aspects of the task, using mathematically sound procedures • may contain an incorrect solution but provides complete procedures, reasoning, and/or explanations • may reflect some misunderstanding of the underlying mathematical concepts and/or procedures
1 Point	A one-point response is incomplete and exhibits many flaws but is not completely incorrect. This response • demonstrates only a limited understanding of the mathematical concepts and/or procedures embodied in the task • 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 correct numerical answer(s) but required work is not provided
0 Points	A zero-point response is incorrect, irrelevant, incoherent, or contains a correct response arrived at using an obviously incorrect procedure. Although some parts may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

Mathematics Turnkey Practice Score Sheet

Name: _____

PS 6 SR 1	(0-2)	
PS 6 SR 2	(0-2)	
PS 6 SR 3	(0-2)	
PS 6 SR 4	(0-2)	
PS 6 SR 5	(0-2)	

PS 4 ER 1	(0-3)	
PS 4 ER 2	(0-3)	
PS 4 ER 3	(0-3)	
PS 4 ER 4	(0-3)	
PS 4 ER 5	(0-3)	

PS 8 SR 1	(0-2)	
PS 8 SR 2	(0-2)	
PS 8 SR 3	(0-2)	
PS 8 SR 4	(0-2)	
PS 8 SR 5	(0-2)	

PS 6 ER 1	(0-3)	
PS 6 ER 2	(0-3)	
PS 6 ER 3	(0-3)	
PS 6 ER 4	(0-3)	
PS 6 ER 5	(0-3)	

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 6 Short-response (2-point) Sample Question

Guide Set

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

Answer _____

Common Core Learning Standard Assessed: 6.EE.2c

Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length s = ½.*

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$$2 \times 3^3 + 4 \times 3^2 - 3 \times 3^2 - 6 \times 3$$
$$= 2 \times 27 + 4 \times 9 - 3 \times 9 - 6 \times 3$$
$$= 54 + 36 - 27 - 18$$
$$= 90 - 27 - 18$$
$$= 63 - 18 = 45$$

Answer _____45_____

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

Answer _____ 45

$$2x^3 + 4x^2 - 3x^2 - 6x$$
$$2 \cdot 3^3 + 4 \cdot 3^2 - 3 \cdot 3^2 - 6 \cdot 3$$
$$2 \times 27 + 4 \times 9 - 3 \times 9 - 6 \times 3$$
$$54 + 36 - 27 - 18$$
$$90 - 27 - 18$$
$$63 - 18$$
$$45$$

Paper	RF Number	Score	Notes
g01	N/A	2	**Score Point 2** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. Three is correctly substituted into the expression, the order of operations is correctly followed, all calculations and the final answer are correct.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$2 \times 3^3 = 54$ $4 \times 3^2 = 36$ $3 \times 3^2 = 27$ $6 \times 3 = 18$

$54 + 36 = 90$ $90 - 27 = 63$ $63 - 18 = 45$

Answer _____45_____

Paper	RF Number	Score	Notes
g02	N/A	2	**Score Point 2** This response answers the question correctly and indicates that the student has completed the task correctly, using mathematically sound procedures. The individual operations are calculated separately; however, they are all done correctly and in the proper order, resulting in the correct answer.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

$$\frac{54 + 36}{90} - 63 - 18 =$$

Show your work.

Answer ___45___

$$9 \times 3$$
$$3 \times 3 \times 3 = 27$$

$$\begin{array}{r} 27 \\ \times 2 \\ \hline 54 \end{array}$$

$$2 \times 27 = 54$$
$$+36$$
$$\overline{90}$$

$$4 \times 9 = 36 \quad 3 \times 3 = 9$$

$$3 \times 9 = 27 \quad \frac{-27}{63} \quad 3 \times 3 = 9 \qquad 6 \times 3 = 18$$

$$\frac{-18}{45}$$

$$2 \times (3 \times 3 \times 3) =$$
$$2 \times 27$$
$$54$$
$$36$$
$$\overline{90}$$
$$27$$
$$63$$
$$-15$$

$$\begin{array}{r} 27 \\ \times 2 \\ \hline 54 \end{array}$$

$$4(3 \times 3) = 9 \qquad 3(3 \times 3) =$$
$$4 \times 9 = 36 \qquad 3 \times 9 = 27$$

$$6 \times 3$$
$$18$$

Guide Paper 3

Page 8

Paper	RF Number	Score	Notes
g03	N/A	2	**Score Point 2** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. The individual operations are calculated separately; however, they are done correctly and in the proper order, resulting in the correct answer. One calculation shown is incorrect $(4(3 \times 3 =) 9)$, but the following line shows the correct calculation and this inaccurate statement within the work does not detract from the demonstration of a thorough understanding.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$$\begin{array}{r} 27 \\ \times\ 2 \\ \hline 54 \end{array}$$

Answer _____ 81 _____

R
e
m
a
s

$2 \cdot 3^3 + 4 \cdot 3^2 \quad 3 \cdot 3^2 - 6 \cdot 3$

$2 \cdot 27 + 4 \cdot 3^2 \quad 3 \cdot 3^2 - 6 \cdot 3$

$2 \cdot 27 + 4 \cdot 9 \quad 3 \cdot 3^2 - 6 \cdot 3$

$2 \cdot 27 + 4 \cdot 9 \quad 3 \cdot 9 - 6 \cdot 3$

$54 + 4 \cdot 9 \quad 3 \cdot 9 - 6 \cdot 3$

$54 + 36 \quad 3 \cdot 9 - 6 \cdot 3$

$54 + 36 \quad 27 - 6 \cdot 3$

$54 + 36 \quad 27 - 18$

$90 \quad -9$

$$\begin{array}{r} 27 \\ -18 \\ \hline 9 \end{array}$$

Guide Paper 4

Page 10

Paper	RF Number	Score	Notes
g04	N/A	1	**Score Point 1** This response is only partially correct. Three is correctly substituted into the expression; the operations on the exponents are performed first, followed by the multiplication operations. The numbers 54 and 36 are correctly added. However, instead of subtracting 27 from 90 or subtracting 18 from -27, 18 is subtracted from 27, resulting in an incorrect answer. The absence of the first subtraction symbol does not detract from the partial understanding of the problem.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

27 9 9
$2\overset{3}{\cancel{3}} + 4\overset{2}{\cancel{3}} - 3\overset{2}{\cancel{3}} - 63$

$54 + 36 - 27 = 12$

$3 \times 3 \times 3$

27
$\times\ 2$
$\overline{954}$

$\overset{8}{9}0$
-16
$\overline{74}$

59
$+36$
$\overline{9}$

27
72
$\overline{16}$

Answer _____ 74 _____

Paper	RF Number	Score	Notes
g05	**N/A**	**1**	**Score Point 1** This response is only partially correct. Three is correctly substituted into the expression, the exponents are simplified first and then the multiplication operations are completed. However, the multiplication error, $6 \times 3 = 12$, and the subtraction error, $27-12=16$ and the change of -27 to 27 result in an incorrect answer. The absence of the multiplication symbols does not detract from the demonstrated level of understanding.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

Answer $= 6$

$$2x^3 + 4x^2 - 3x^2 - 6x$$

$$2 \cdot 3^3 + 4 \times 3^2 - 3 \cdot 3^2 - 6 \cdot 3$$

$$2 \cdot 9 + 4 \cdot 6 - 3 \cdot 6 - 6 \cdot 3$$

$$18 + 24 - 18 - 18$$

$$42 - 18 - 18$$

$$24 - 18$$

$$6$$

$$\begin{array}{r} \overset{1}{1}8 \\ +24 \\ \hline 42 \end{array}$$

Paper	RF Number	Score	Notes
g06	**N/A**	**1**	**Score Point 1** This response is only partially correct and indicates that the student has demonstrated only a partial understanding of the mathematical concepts in the task. Three is correctly substituted into the expression and the order of operations is correct. However, the simplification of the exponential terms is incorrect; the base is multiplied by the exponent. The resultant answer is also incorrect.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

Answer ___261___

$2 \cdot 3^3 + 4 \cdot 3^2 - 3 \cdot 3^2 - 6 \cdot 3$

$6^3 + 12^2 - 9^2 - 18$

$216 + 144 - 81 - 18$

$360 - 81 - 18$

$279 - 18$

$$
\begin{array}{r}
3 \\
\times\ 6 \\
\hline
216
\end{array}
$$

$$
\begin{array}{r}
216 \\
+144 \\
\hline
360
\end{array}
$$

$$
\begin{array}{r}
360 \\
-\ 81 \\
\hline
279
\end{array}
$$

$$
\begin{array}{r}
12 \\
\times\ 12 \\
\hline
24 \\
+120 \\
\hline
144
\end{array}
$$

$$
\begin{array}{r}
279 \\
-\ 18 \\
\hline
261
\end{array}
$$

Paper	RF Number	Score	Notes
g07	N/A	0	**Score Point 0** This response is incorrect. The order of operations is incorrect; the multiplication operations are completed prior to the exponent calculations.

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

$23 \quad 43 \quad 33 \quad 63$

Show your work.

Answer ___26___

$$23^3 + 43^2 - 33^2 - 63$$

$$\begin{array}{c} 23 \\ \times\ 3 \\ \hline 69 \end{array} + \begin{array}{c} 43 \\ \times\ 2 \\ \hline 86 \end{array} - \begin{array}{c} 33 \\ \times\ 2 \\ \hline 66 \end{array}$$

$$\begin{array}{r} ^{(1)}69 \\ +86 \\ \hline \end{array}$$

$$\begin{array}{r} 9\,\overset{14}{\cancel{5}}\,\overset{15}{\cancel{5}} \\ -66 \\ \hline 89 \\ -63 \\ \hline \boxed{26} \end{array}$$

Paper	RF Number	Score	Notes
g08	**N/A**	**0**	**Score Point 0** This response is incorrect. An incorrect procedure is used for the substitution of 3 into the expression, the exponents are incorrectly simplified, and the answer is incorrect.

University of the State of New York
State Education Department

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 6 Short-response (2-point)
Sample Question

Practice Set

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

Answer ___171___

$$2x^3 + 4x^2 - 3x^2 - 6x$$
$$2(3^3) + 4(3^2) - 3(3^2) - 6(3)$$
$$2(81) + 4(27) - 3(27) - 6(3)$$
$$162 + 108 - 81 - 18$$
$$270 - 81 - 18$$
$$189 - 18$$
$$171$$

$$\begin{array}{r} 81 \\ \times\ 2 \\ \hline 162 \end{array} \qquad \begin{array}{r} ^2 \\ 27 \\ \times\ 4 \\ \hline 108 \end{array} \qquad \begin{array}{r} ^2 \\ 27 \\ \times\ 3 \\ \hline 81 \end{array}$$

$$\begin{array}{r} 1 \\ 162 \\ +\ 108 \\ \hline 270 \end{array} \qquad \begin{array}{r} 16 \\ 2\ 7\ 10 \\ 2\ 7\ 0 \\ -\ 81 \\ \hline 189 \end{array}$$

$$\begin{array}{r} 189 \\ -\ 18 \\ \hline 171 \end{array}$$

Practice Set 1

Page 1

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$2x^3 + 4x^2 - 3x^2 - 6x$

$2 \cdot 3^3 + 4 \cdot 3^2 - 3 \cdot 3^2 - 6x$

$2 \times 27 + 4 \times 9 - 3 \times 9 - 6 \times 3$

$54 + 36 - 27 - 18$

Answer ___45___

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$2(3)^3 + 4(3)^2 - 3(3)^2$

$= 2(27) + 4(9) - 3(9)$

$= 54 + 36 - 27$

$= 63.$

Answer ____63____

$\dfrac{27}{54}$

$\overset{8}{\cancel{9}0}$
$\underline{-27}$
63

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$$2x^3 + 4x^2 - 3x^2$$
$$6^3 + 12^2 - 9^2$$
$$18 + 24 - 18 = 24$$

Answer _____ 24 _____

Practice Set 4

Page 4

1 What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$?

Show your work.

$2x^3$

$3 \times 3 \times 3 = 27$

$3 \times 3 = 9 \times 4 = 36$

$2 \times 27 = 54$

Answer 45

$\begin{array}{r} {}^{1}54 \\ +36 \\ \hline 90 \end{array}$

$\begin{array}{r} 27 \\ \hline 63 \end{array}$

$\begin{array}{r} -18 \\ \hline 45 \end{array}$

Practice Set 5

Page 5

New York State Testing Program
Mathematics Test
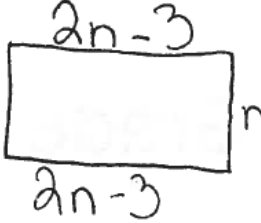
2013 Turnkey Training

Grade 8 Short-response (2-point) Sample Question

Guide Set

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

Answer _____

Common Core Learning Standard Assessed: 8.EE.7b

Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$$w = \text{width}$$
$$2w - 3 = \text{length}$$
$$P = 2 \times (2w - 3) + 2 \times w = 60$$
$$4w - 6 + 2w = 60$$
$$6w - 6 = 60$$
$$6w - 6 + 6 = 60 + 6$$
$$6w = 66$$
$$\frac{6w}{6} = \frac{66}{6}$$
$$w = 11$$

$$2w - 3 = \text{length}$$
$$2 \times 11 - 3 = 22 - 3 = 19$$
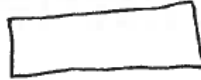
Answer <u>Width = 11 ft; Length = 19 ft</u>

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$$\text{length} = 2n - 3 = \boxed{19}$$
$$\overset{2 \cdot 11 - 3}{}$$
$$\text{width} = n = \boxed{11}$$

$$\textcircled{4n} - 6 \textcircled{+ 2n} = 60$$
$$6n - \cancel{6} = 60$$
$$\underline{ + \cancel{6} + 6}$$
$$\cancel{6}n = \underline{66}$$
$$\cancel{6} 6$$
$$\boxed{n = 11}$$

Answer $\boxed{\text{width} = 11 \quad \text{length} = 19}$

Paper	RF Number	Score	Notes
g01	N/A	2	**Score Point 2** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. The lengths of each side are shown in terms of n (n, $2n$-3) and are correctly used with the given perimeter to solve for n. The answer for both dimensions is correct. Units in the answer are not required since the question directs students to "determine the dimensions, in feet…"

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$x =$ width

$2x - 3 =$ length

$$
\begin{array}{r}
2x\ ^-3 \\
2x\ ^-3 \\
x \\
x \\
\hline
6x\ ^-6
\end{array}
$$

Answer ___11ft, 19ft___

$2(11)\ ^-3.$

$22\ ^-3 = 19$

$$6x\ ^-6 = 60$$
$$\underline{+6\quad +6}$$
$$\frac{6x}{6} = \frac{66}{6}$$
$$\boxed{x = 11ft}$$

Paper	RF Number	Score	Notes
g02	N/A	2	**Score Point 2** This response answers the question correctly and indicates that the student has completed the task correctly, using mathematically sound procedures. The lengths of each side are correctly shown in terms of *x* and are appropriately used with the given perimeter to solve for *x*. The answer for both dimensions is correct.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.
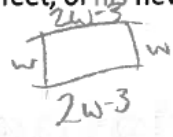
Length = 19
width = 11

Length = 2w − 3
Width = w

2w−3

2w−3

$6w - 6 = 60$
$ +6 \quad +6$

$\dfrac{6w}{6} = \dfrac{66}{6}$

$\boxed{w = 11}$

Answer 19ft × 11ft

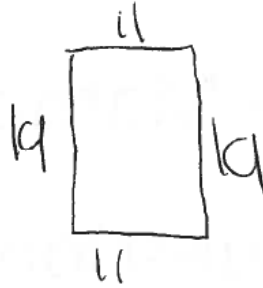| Paper	RF Number	Score	Notes
g03	N/A	2	**Score Point 2** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. The lengths of each side are correctly shown in terms of *w* and are used correctly with the given perimeter to solve for *w*.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

Total 60 feet

$6x - 6 = 60$

$+6 \quad +6$

$\dfrac{6x}{6} = \dfrac{66}{6}$
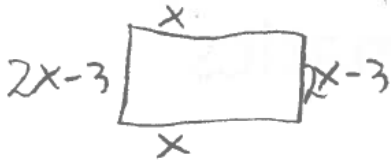
Answer _____$X = 11$_____

$X = 11$

Paper	RF Number	Score	Notes
g04	N/A	1	**Score Point 1** This response is only partially correct and correctly addresses most elements of the task. The length of each side is correctly determined in terms of *x* and the equation is set up correctly and solved for *x*. However, the value given for *x* is not used to calculate the length of the garden, (2*x* – 3). Therefore, only one dimension – the width – is given in the answer. The absence of units in the answer does not detract from the demonstration of understanding.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

11 x 2 = 22

22
- 3
───
19

11
+11
19
19
───
60

11

19   19

11

Answer **Length** 19 feet   width 11 feet

Paper	RF Number	Score	Notes
g05	N/A	1	**Score Point 1** This response shows only partial understanding and contains correct numerical answers, but the required work is not provided. The correct numerical answers are given and a check of the answers is provided. However, it is not clear from the work provided how the width (11) was initially determined.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$X-3$

X ‖ ‖ X

$X-3$
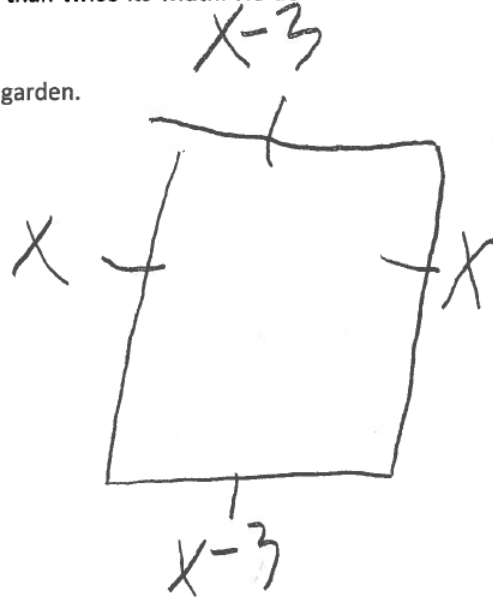
Answer ___12___

$13-3$
$13-3$
13
13
46

$\dfrac{66}{4}$

$L = X$

$W = X-3$

60

$4x - 6 = 60$
$+6 \quad +6$

$X-3$
$X-3$
X
X
_____
$4X-6$

Paper	RF Number	Score	Notes
g06	N/A	1	**Score Point 1** This response is only partially correct and demonstrates only a partial understanding of the mathematical concepts. The rectangle's length and width are incorrectly expressed as x and x-3, respectively. However, these incorrect expressions are then correctly used in the perimeter equation, solving $x = 66/4$. The calculations are incorrectly completed.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$$60 = 2x + 3$$
$$\underline{-3 \qquad +3}$$
$$\frac{57}{2} = \frac{2x}{2}$$
$$28.5 = x$$

Answer $\underline{length = 28.5 ft}$
$\underline{width = 1.5 ft}$

$$60 = 2(28.5) + 3$$
$$60 = 57 + 3$$
$$60 = 60$$

$$28.5 \times 2 = 57\cancel{6} \quad \text{Length}$$

3 left over

$$3 \div 2 = 1.5 \text{ width}$$

Paper	RF Number	Score	Notes
g07	N/A	0	**Score Point 0** This response is incorrect. The incorrect equation is used for perimeter and the procedure used to determine the width is not sufficient to demonstrate even a limited understanding of the mathematical concepts.

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

X

$2x-3$ ⬜ $2x-3$

X

Answer ___ $6x-6$ ___

⬜

$2x-3$
$2x-3$
$1x$
$1x$
_____
$6x-6$

Paper	RF Number	Score	Notes
g08	N/A	0	**Score Point 0** This response is incorrect. The correct dimensions are determined in terms of x and the four sides are added. However, this expression ($6x$-6) is never equated to the value given for the perimeter and no final values are determined for the dimensions. While this response contains some correct mathematical procedures, there is not enough work completed to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 8 Short-response (2-point) Sample Question

Practice Set

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

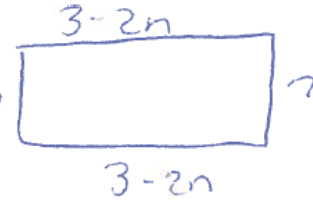Determine the dimensions, in feet, of his new garden.

Show your work.

$l = 3 - 2n$

$2: 2n$

$3 - 2n$

$3 - 2n$

$3 - 2n$

$6 - 4n + n = 60$

$6 - 5n = 60$
$-6 \quad \quad - 6$

$\dfrac{-5n}{5} = \dfrac{54}{5}$

Answer _____ -19 _____

$3 - 2n + n = 60$

$3 - 3n = 60$
$-3 \quad \quad -3$

$\dfrac{3n}{3} = \dfrac{54}{-3}$

$\boxed{n = -19}$

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

width is w

length is $l = 2w - 3$

$P = 60$

$2 \times (2w - 3 + w)$

$2 \times (3w - 3)$

$6w - 6 = 60$

$6w = 66$

$w = 11$

Answer _____11 and 19_____

Practice Set 2

Page 2

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

Answer $W=11 / L=22$

$x = width$ II

$2x-3 = length$ 19

$2x-3$
$2x-3$
x
x
_____
$6x-6=60$ $x=11$

$+6$ $+6$

$\dfrac{6x}{6} = \dfrac{66}{6}$ 11

     22

Practice Set 3

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$X = $ width.

$2x - 3 = $ length

$2(21) - 3$

$2x - 3 + x = 60$

$3x - 3 = 60$

$+3 \quad + \quad 3$

$\dfrac{3x}{3} = \dfrac{63}{3}$

$X = 21$

Answer width $= 21$ ft

length $= 39$ ft.

$\begin{array}{r} 21 \\ \times \ 2 \\ \hline 42 \end{array}$

$\begin{array}{r} 42 \\ - \ 3 \\ \hline 39 \end{array}$

1 David currently has a square garden. He wants to redesign his garden and make it into a rectangle with a length that is 3 feet shorter than twice its width. He decides that the perimeter should be 60 feet.

Determine the dimensions, in feet, of his new garden.

Show your work.

$60 \div 2 = 30$

$2x - 3 + x = 30$

$2x + x = 30 + 3$

$3x = 33$

$x = 11$

width = 11 feet

$11 \cdot 2 - 3 = 19$

length = 19 feet

Answer _width = 11 feet_
length = 19 feet

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 4 Extended-response (3-point)
Sample Question

Guide Set

2 Candy wants to buy herself a new bicycle that cost $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation_____

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

Answer $_____

Common Core Learning Standard Assessed: 4.OA.3

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

2 Candy wants to buy herself a new bicycle that cost $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $(240 - 32) \div 4 = x$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$(240 - 32) \div 4 = x$$

$$208 \div 4 = 52$$

Answer $ 52.00

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $(240 - 32) \div 4 = x$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$(240 \cdot 32) \div 4 = x$$
$$208 \div 4 = x$$

$$\begin{array}{r} 52 \\ 4\overline{)208} \\ 20 \\ \hline 08 \\ 08 \\ \hline 0 \end{array}$$

Answer $ 52

Paper	RF Number	Score	Notes
g01	**N/A**	**3**	**Score Point 3** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. The written equation is correct, the mathematical procedure used to solve the equation is appropriate with all necessary work shown, and the final answer is correct.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $\dfrac{(240-32)}{4} = X \text{ (IN DOLLARS)}$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$240 - 32 = 208$$
$$208 \div 4 = 52$$

Answer $ \underline{\hspace{1cm} 52 \hspace{3cm}}

Paper	RF Number	Score	Notes
g02	N/A	3	**Score Point 3** This response answers the question correctly and indicates that the student has completed the task correctly, using mathematically sound procedures. The written equation is correct, the mathematical procedure used to solve the equation is appropriate with all necessary work shown, and the final answer is correct.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $\quad 4x = 240 - 32$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$4x = 240 - 32$$
$$4x = 208$$
$$x = \frac{208}{4} = \frac{104}{2} = \frac{52}{1} = 52$$

Answer $ $\quad 52.00$

Paper	RF Number	Score	Notes
g03	N/A	3	**Score Point 3** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. The written equation is correct, the mathematical procedure used to solve the equation is appropriate with all necessary work shown, and the final answer is correct.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $(240 - 32) / 4$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\frac{240 - 32}{4} = \frac{240}{4} - \frac{32}{4}$$

$$60 - 8 = 52$$

Answer $ 52

Paper	RF Number	Score	Notes
g04	**N/A**	**2**	**Score Point 2** This response is partially correct and addresses most aspects of the task, using mathematically sound procedures. An expression rather than an equation is written and it does not include a variable. However, the expression has been simplified correctly and the final answer is correct.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation _____ $208 \div 4 = X$ _____

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\begin{array}{r} 240 \\ - 32 \\ \hline 208 \end{array}$$

$$208 \div 4 = 54$$

Answer $ _____ 54.00 _____

Paper	RF Number	Score	Notes
g05	N/A	2	**Score Point 2** This response demonstrates partial understanding and addresses most aspects of the task, using mathematically sound procedures. The equation is partially correct; it does not account for the 208. The mathematical procedure used to determine the amount of money to be saved each month is mathematically sound; however, the division error results in an incorrect answer.

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $240 - 32 \div 4 = x$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$240 - 8 = x \qquad 4\overline{)32}$$
$$232 = x$$

Answer $ __232__

Paper	RF Number	Score	Notes
g06	N/A	2	**Score Point 2** This response demonstrates partial understanding. The equation is missing the parentheses around 240 - 32. However, the correct order of operations is followed to solve the incorrect equation.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $x \div 4$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\begin{array}{r} \overset{3\ 10}{2\cancel{4}\cancel{0}} \\ -\ 32 \\ \hline \end{array}$$

$x = 208$

Real
$208 \div 4 = {}^\$57$
$200 \div 4 = {}^\$55$
estimite

Answer $ $57.00

Paper	RF Number	Score	Notes
g07	**N/A**	**1**	**Score Point 1** This response exhibits many flaws, and demonstrates only a limited understanding of the question. There is no equation given and the expression ($x \div 4$) does not show any understanding. The procedure used to solve the equation is appropriate; however, there are two division errors – both for the estimate (200 $\div$ 4 = \$55) and for the equation identified as "real" (208 $\div$ 4 = \$57). The final answer (57.00) is incorrect.

2

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

$$\begin{array}{r} \overset{1}{3}2 \\ +208 \\ \hline 240 \end{array}$$

Equation _____

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

Answer $ _____ $52 _____

Paper	RF Number	Score	Notes
g08	**N/A**	**1**	**Score Point 1** This response demonstrates only a limited understanding of the mathematical concepts. The equation is not provided and while the answer is correct, not all of the required work is provided.

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

$$\$240\div 4 = X$$

Equation

$$\begin{array}{r} \$240 \\ -\ 32 \\ \hline 208 \end{array}$$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$240 \div 4 = 60$$

Answer $ 60 per month

Paper	RF Number	Score	Notes
g09	N/A	1	**Score Point 1** This response demonstrates only a limited understanding. While some aspects of the task are addressed correctly, faulty reasoning results in an inadequate solution. The equation is incorrect and does not take into account the $32 already saved. This reflects a lack of essential understanding of the underlying mathematical concept. However, that incorrect equation is solved correctly.

2

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $X = 208$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\$2\cancel{4}\cancel{0}$$
$$-\$\ 3\ 2$$
$$\overline{\quad 2\ 0\ 8}$$

Answer $\$ 208$

Paper	RF Number	Score	Notes
g10	N/A	0	**Score Point 0** This response is incorrect. The initial equation is not correct and only the very first step of the process is completed. This results in an incorrect answer. Holistically, this is not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

2

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $32 + X \times X = $240

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

Answer $ 52

Paper	RF Number	Score	Notes
g11	N/A	0	**Score Point 0** This response is incorrect. The equation given is incorrect and while the final answer is correct, no correct work or mathematically appropriate process is shown that would lead to that answer.

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 4 Extended-response (3-point) Sample Question

Practice Set

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, *x* dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $100 + 100 + 40 = 240$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$-\;{240 \atop 32}$$

$$\overline{\;(208)\;}$$

she still needs

$$180 \;\begin{cases} 90 \\ 90 \\ 20 \end{cases}$$

$$\frac{8}{208}$$

Answer $ __90__ one month, 90 the next, 20 the third, then 8.

Practice Set 1

Page 1

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $4x = 240 - 32$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\$2\cancel{40}^{10}$$
$$-\ 32$$
$$\overline{208}$$

$$\begin{array}{r} 52 \\ 4\overline{)208} \\ 20\downarrow \\ \overline{08} \\ 8 \\ \overline{0} \end{array}$$

Answer $\$ \quad 52.00$

Practice Set 2

Page 2

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next ~~four months.~~

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $240 - 32 = 208 \div 4 = 202$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$\begin{array}{r} \overset{3}{\cancel{2}}\overset{10}{\cancel{4}}\cancel{0} \\ -\ \$ \ 32 \\ \hline \$208 \end{array} \qquad \begin{array}{r} \$208 \\ 4 \\ \hline \$202 \end{array}$$

Answer $ 202

Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $\$240 - \$32 = \$208 \div 4 = x$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$
\begin{array}{r}
\$5\ 2 \\
4\overline{\smash)208} \\
\underline{-20} \\
008 \\
\underline{-8} \\
0
\end{array}
$$

$$\$52$$

Answer $ _____ $52_____

2 Candy wants to buy herself a new bicycle that costs $240. Candy has already saved $32, but she needs to make a plan so she can save the rest of the money she needs. She decides to save the same amount of money, x dollars, each month for the next four months.

Write an equation that helps Candy determine the amount of money she must save each month.

Equation $240 - 32 = x\,4$

Solve the equation to find the amount of money she must save each month to meet her goal of buying a bicycle.

Show your work.

$$240 = x\,4 + 32$$
$$240 = 36\,x$$
$$240 - 36 = 36\,x - 36$$
$$x = 204$$

Answer $ 204

Practice Set 5

Page 5

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 6 Extended-response (3-point) Sample Question
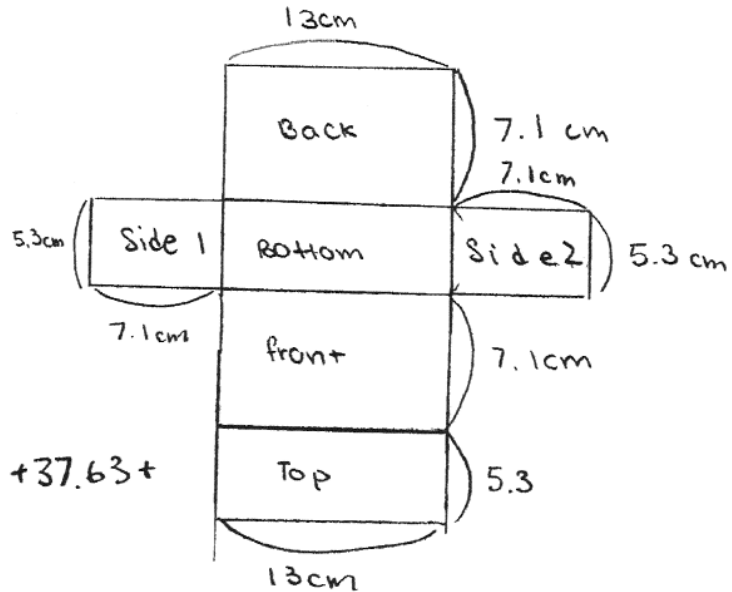
Guide Set

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

Answer _____

Common Core Learning Standard Assessed: 6.G.4

Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

7.1 cm

13 cm
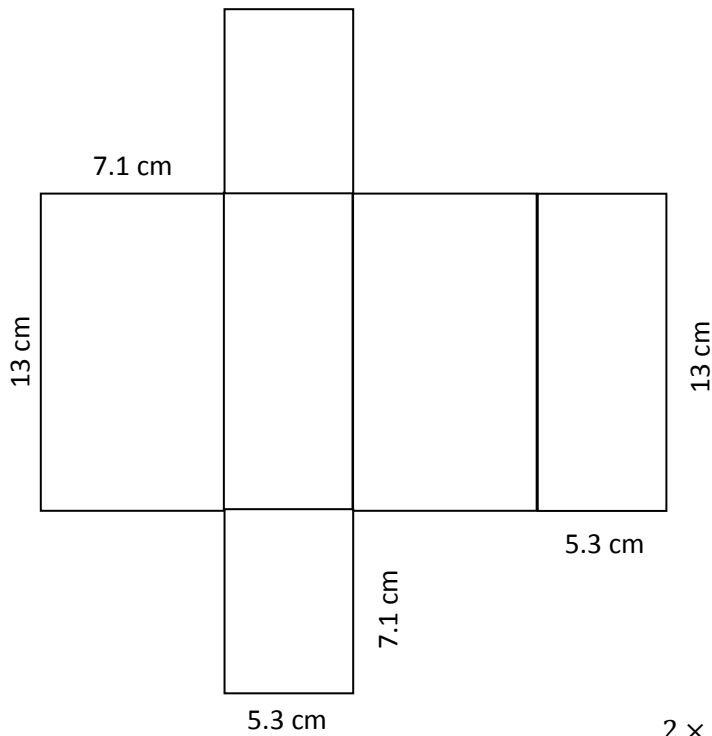
13 cm

5.3 cm

7.1 cm

5.3 cm

$2 \times (13 \times 7.1) = 2 \times 92.3 = 184.6$

$2 \times (5.3 \times 7.1) = 2 \times 37.63 = 75.26$

$2 \times (5.3 \times 13) = 137.8$

$184.6 + 75.26 + 137.8 = 397.66$

Answer _____397.66 sq. cm._____

2

A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

Back = 13×7.1 = 92.3
Front = 13×7.1 = 92.3
Bottom = 13×5.3 = 68.9
Top = 13×5.3 = 68.9
Side 1 = 7.1×5.3 = 37.63
Side 2 = 7.1×5.3 = 37.63

92.3+92.3+68.9+68.9+37.63+
37.63=

13cm

	Back		7.1 cm
5.3cm	Side 1	Bottom	Side2	5.3 cm
7.1cm		front	7.1cm
	Top	5.3
	13cm

7.1cm

Answer: __397.66__

Paper	RF Number	Score	Notes
g01	**N/A**	**3**	**Score Point 3** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. A complete net is drawn and accurately labeled, and all calculations for each of the rectangles are shown. The final answer, the sum of the area of all six rectangles, is correct.

2

A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.
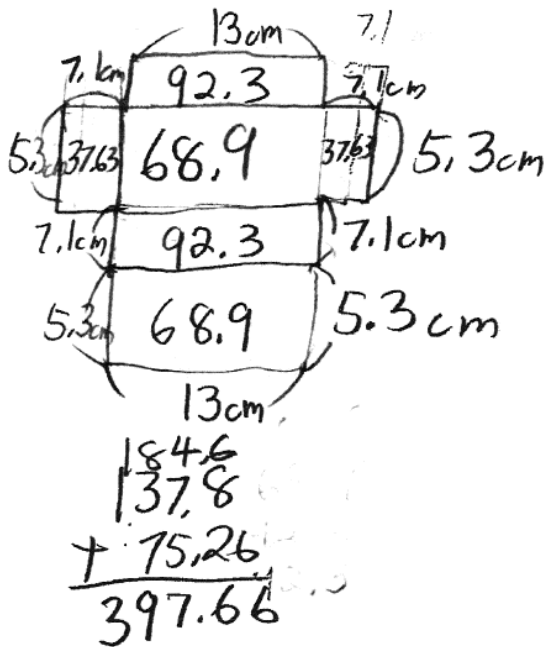
$$\begin{array}{r} 13 \\ \times 7.1 \\ \hline 13 \\ 91 \\ \hline 92.3 \end{array} \qquad \begin{array}{r} 13 \\ \times 5.3 \\ \hline 39 \\ 65 \\ \hline 68.9 \end{array}$$

$$\begin{array}{r} 7.1 \\ \times 5.3 \\ \hline 213 \\ 355 \\ \hline 37.63 \end{array} \qquad \begin{array}{r} 68.9 \\ \times\ 2 \\ \hline 137.8 \end{array} \qquad \begin{array}{r} 92.3 \\ \times\ 2 \\ \hline 184.6 \end{array}$$

$$\begin{array}{r} 37.63 \\ \times\ 2 \\ \hline 75.26 \end{array}$$

$$\begin{array}{r} 184.6 \\ 137.8 \\ +\ 75.26 \\ \hline 397.66 \end{array}$$

Answer: __397.66 cm²__

Paper	RF Number	Score	Notes
g02	N/A	3	**Score Point 3** This response answers the question correctly and indicates that the student has completed the task correctly, using mathematically sound procedures. A complete net is drawn and accurately labeled. The calculations for each of the three sizes of rectangles are shown, multiplied by two, and then added. The final answer is correct.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work:

(not drawn to scale)
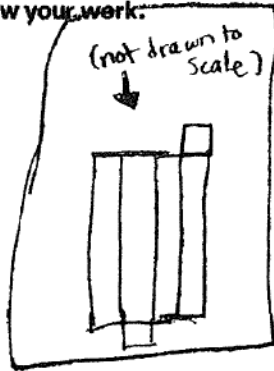
Surface area = 397.66 cm^3

$7.1 \times 5.3 = 37.63 \times 2 = 75.26$

$13 \times 5.3 = 68.9 \times 2 = 137.8$

$7.1 \times 13 = 92.3 \times 2 = 184.6$

$75.26 + 137.8 + 184.6 = 397.66$

Answer: 397.66 cm^2

Paper	RF Number	Score	Notes
g03	N/A	3	**Score Point 3** This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. A complete net is drawn. The calculations for each of the three sizes of rectangles are shown, multiplied by two, and then added. The final answer is correct. Labeling the dimensions of the net is not required for demonstration of a thorough understanding of the problem. The run-on equations and the cm^3 label do not detract from the demonstration of a thorough understanding of the mathematical concepts.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters. (

Show your work.

(not to scale)

$13 \times 2 \times 5.3 = 157.8$

$13 \times 2 \times 7.1 = 184.6$ —

$7.1 \times 2 \times 5.3 = 75.26$

t

11

$387.66 \ cm^2$

5.3 cm

7.1 cm

5.3 cm

7.1 cm

13 cm   5.3 cm

$387.66 \ cm^2$

Answer: $387.66 \ cm^2$

Paper	RF Number	Score	Notes
g04	**N/A**	2	**Score Point 2** This response is partially correct and addresses most aspects of the task, using mathematically sound procedures. A complete net is drawn and accurately labeled, and the correct procedure for the area calculations for each rectangle is used. However, a multiplication error is made while calculating one of the areas (13 × 2 × 5.3 = 157.8) and an addition error is made when determining the total area (157.8 + 184.6 + 75.26 = 387.66). The lines that appear to be extra flaps on the net are indicators of the lengths of the sides.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.
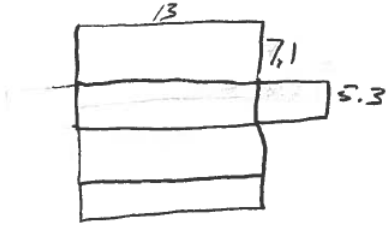
$$2 \times (13 \times 7.1) + 2 \times (7.1 \times 5.3) + (5.3 \times 13)$$

$$2 \times 92.3 + 2 \times 37.63 + 68.9$$

$$184.6 + 75.26 + 68.9$$

184.6
75.26
68.9
———
328.76

Answer: _328.76_

Paper	RF Number	Score	Notes
g05	N/A	2	**Score Point 2** This response demonstrates partial understanding of the mathematical procedures embodied in the task. The net, missing the rectangle that represents one side (5.3 by 7.1) of the box, is only partially correct. The surface area calculated is for an open, rather than a closed, box; the area representing the top of the box is not included.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

Answer: _____105.50_____

$$1$$
$$3763$$
$$2$$
$$\times 2$$
$$75.26 \text{12}$$
$$84.6 \text{8}$$
$$17.8$$
$$650$$

$$7.1$$
$$\times 13$$
$$213$$
$$+710$$
$$92\frac{3}{2}$$
$$\times$$
$$184.6$$

$$7.1$$
$$\times 6.6 \begin{array}{c} 5.3 \\ 13 \end{array}$$
$$159$$
$$530$$
$$589$$

$$13$$

$$2(5.3 \times 7.1) + 2(13 \times 7.1) + 2(13 \times 5.3) =$$

$$7.1$$
$$\times 5.3$$
$$213$$
$$+3550$$
$$3763$$

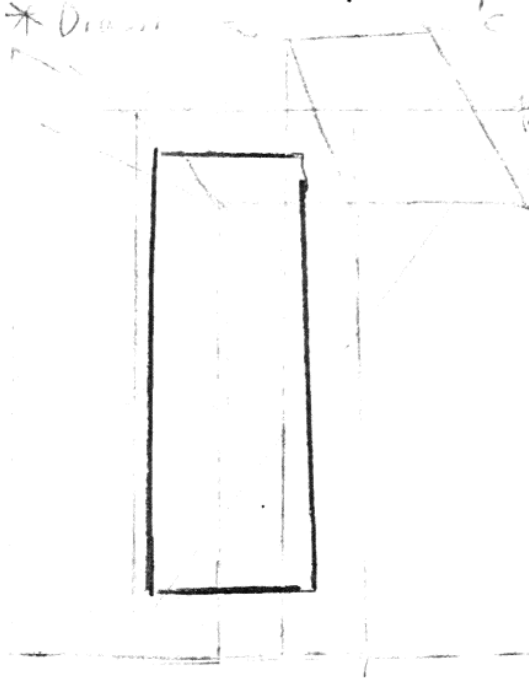| Paper	RF Number	Score	Notes
g06	N/A	2	**Score Point 2** This response is partially correct and addresses most aspects of the task, using mathematically sound procedures. A complete net is drawn and accurately labeled, and the correct procedure for the total area calculation is shown in the work. However, minor calculation errors result in an incorrect answer.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

Not drawn to scale

Answer: 198.83 units^2

$13 \times 5.3 = 68.9$

$7.1 \times 5.3 = 37.63$

$7.1 \times 13 = 92.3$

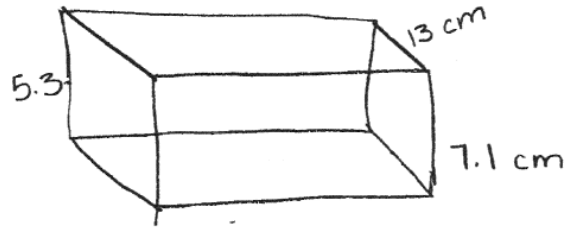$\begin{array}{r} 68.90 \\ 37.63 \\ +92.30 \\ \hline 198.83 \end{array}$

Paper	RF Number	Score	Notes
g07	N/A	1	**Score Point 1** This response is incomplete and exhibits many flaws but is not completely incorrect; it addresses some elements of the task correctly but reaches an inadequate solution and provides reasoning that is incomplete. No net is shown. The area calculations for each size rectangle are shown and are correctly added together. However, the determined value is not multiplied by 2 to determine the total surface area.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

$$\overset{1\ \ 1\ \ ^2}{\underset{10,75\ 0}{\begin{array}{r}1378\\7526\\+\ 1846\end{array}}}$$

$$\overset{689}{2(13\cdot5.3)}+\overset{3763}{2\left(7.1\cdot5\cdot3\right)}+\overset{923}{2\left(13\cdot7.1\right)}$$

$$1378+\ 7526+\ 1846$$

Answer: _10,750 cm.²_

$$\begin{array}{r}\overset{2}{13}\\ \times 7.1\\ \hline 13\\ 9\ 1\ \cancel{0}\\ \hline 9\ 23\\ 2\\ \hline 18\ 46\end{array}$$

$$\begin{array}{r}5.3\\ \times 1\ \cancel{3}\\ \hline 15\ 9\\ +\ 5\ 3\ \cancel{0}\\ \hline 6\ 8\ 9\end{array}$$

$$\overset{6\ 6}{689}$$
$$\begin{array}{r}2\\ \hline 1{,}\overset{8}{5\cancel{7}}\end{array}$$

$$\begin{array}{r}7.1\\ \times 5.\cancel{3}\\ \hline 2\ 1\ 3\\ +\ 355\ \cancel{\cancel{0}}\\ \hline \overset{\cdot}{1}3\overset{\cdot}{7}6\ 3\\ \times\quad 2\\ \hline 75\ 26\end{array}$$

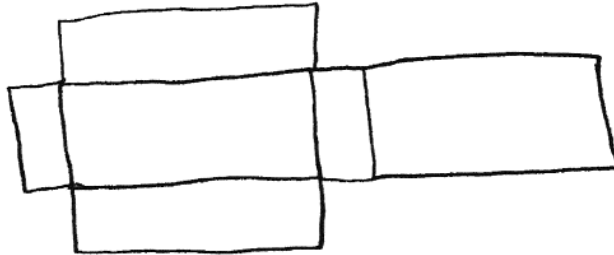| Paper	RF Number	Score	Notes
g08	N/A	1	**Score Point 1** This response exhibits many flaws but is not completely incorrect and demonstrates only a limited understanding of the mathematical procedures embodied in the task. No net is shown. While the work shows the correct procedures for the calculation of the total surface area, multiplication errors for all three sizes of rectangles result in an incorrect answer.

2

A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

$$
\begin{array}{r}
5.3 \\
\times\ 1\ 3 \\
\hline
159 \\
+\ 530 \\
\hline
68.9 \\
+\ \ 7.1 \\
\hline
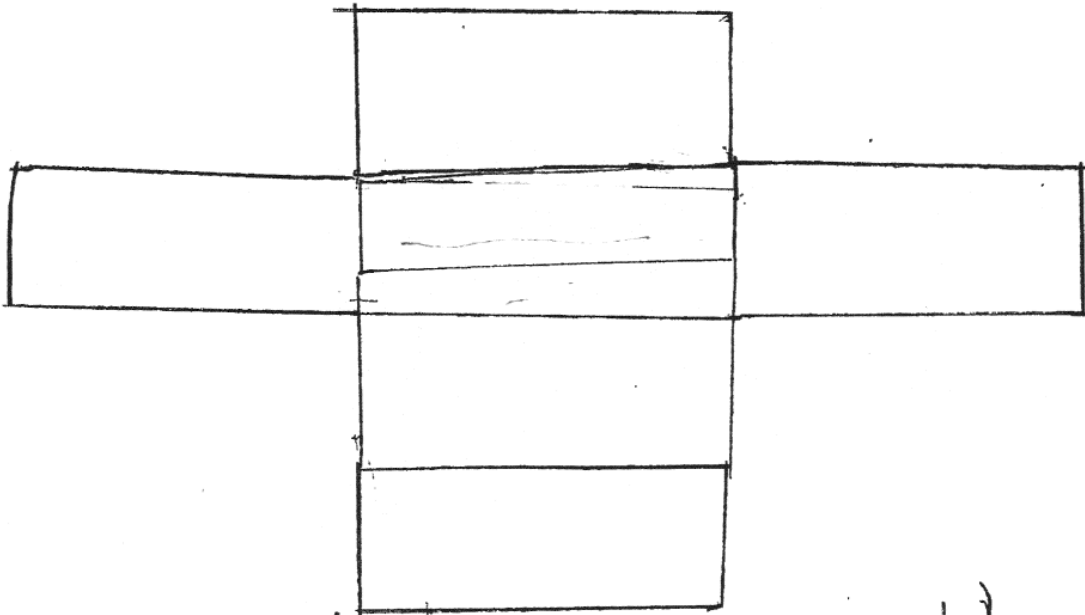74.9
\end{array}
$$

Answer: 74.9^2 cm

Paper	RF Number	Score	Notes
g09	N/A	1	**Score Point 1** This response exhibits many flaws but is not completely incorrect and reflects a lack of essential understanding of the underlying mathematical concepts. An appropriate net is shown. However, an inappropriate mathematical process is used to determine the surface area and the answer is incorrect.

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

(Not Drawn to scale)

Answer: ___134.2cm²___

| Paper	RF Number	Score	Notes
g10	N/A	0	**Score Point 0** This response is incorrect. A net is shown; however, the size of all 6 rectangles is approximately the same. This net is not an appropriate representation of the original three-dimensional figure. No other work is shown and the answer given is incorrect.

2

A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

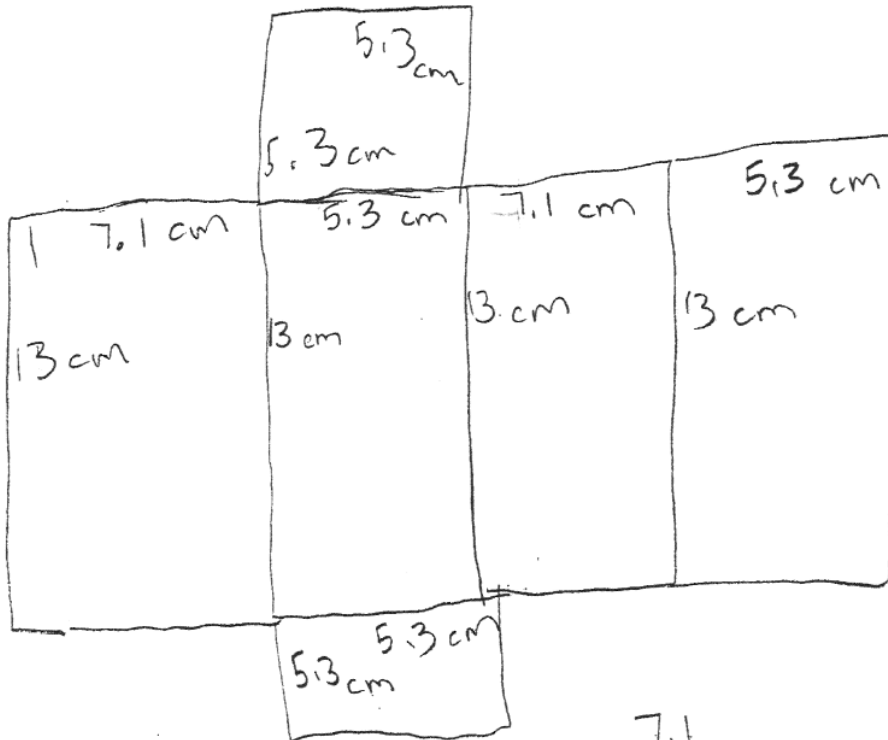$$13 \times 7.1 \times 5.3 = 489.19$$

Answer: 489.19

Paper	RF Number	Score	Notes
g11	N/A	0	**Score Point 0** This response is irrelevant. No net is shown and the volume is calculated, rather than the surface area.

New York State Testing Program
Mathematics Test

2013 Turnkey Training

Grade 6 Extended-response (3-point) Sample Question

Practice Set

2 A closed box in the shape of a rectangular prism has a **length** of 13 cm, a **width** of 5.3 cm, and a **height** of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

5.3cm

7.1cm 37.63 cm² 7.1cm
7.1cm   7.1cm

13cm   253.5 cm²   13cm   19.5

7.1cm   7.1cm
7.1cm   7.1cm

13cm   13cm

5.3cm

$$37.63$$
$$37.63$$
$$68.90$$
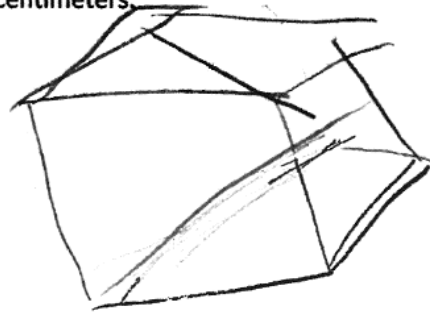$$+253.50$$
$$\overline{397.66}$$

Answer: $\underline{397.66\ cm^2}$

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

5.3 cm

5.3 cm

7.1 cm   5.3 cm   7.1 cm   5.3 cm

13 cm   13 cm   13 cm   13 cm

5.3 cm   5.3 cm
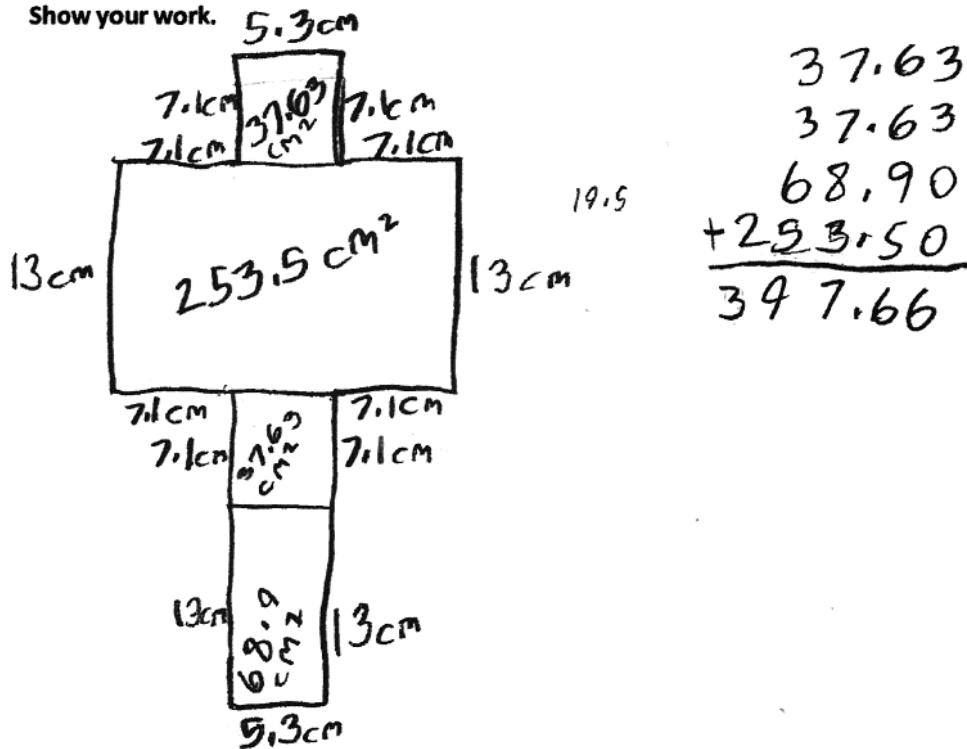
Answer: ___923___ cm²

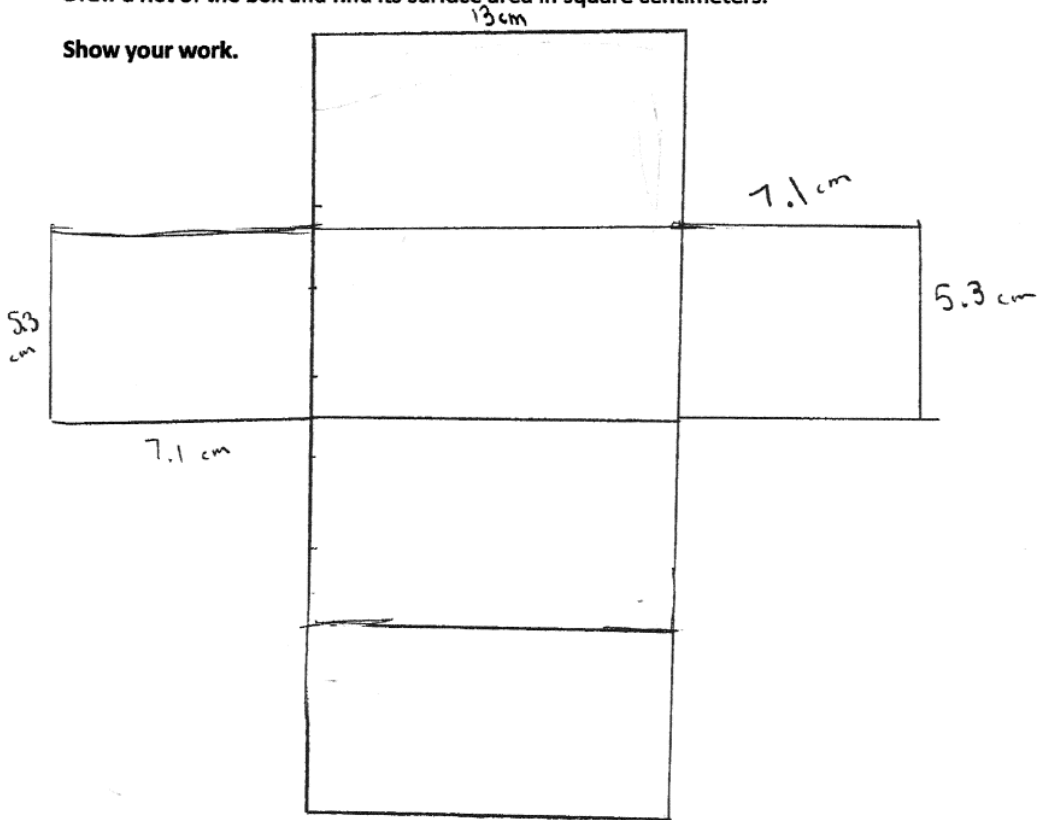$$\begin{array}{r} 7.1 \\ \times 13 \\ \hline 213 \\ + 71 \\ \hline 923 \end{array}$$

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

SA = ⊃A

$$13 \times 5.3 = 68.9$$

$$68.9 \times 7.1 = 489.19 \text{ CM}$$

$$\begin{array}{r} 12.2475 \\ 4\overline{)489.1900} \\ \underline{-4} \\ 08 \\ \underline{-8} \\ 09 \\ \underline{-8} \\ 19 \\ \underline{-16} \\ 30 \\ \underline{-28} \\ 20 \\ \underline{-20} \end{array}$$

R. ?

Answer: ___12.2,475___ cm
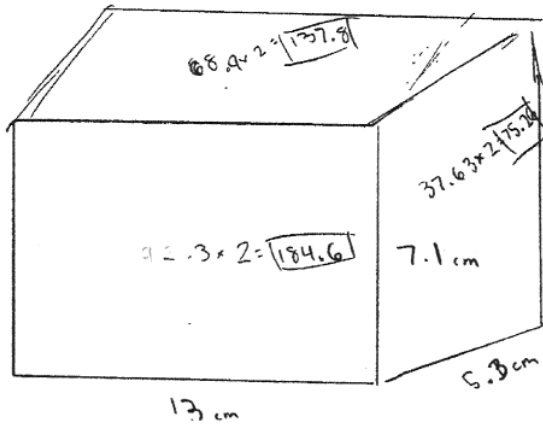
Practice Set 3

Page 3

2 A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

13 cm

7.1 cm

5.3 cm

5.3 cm

7.1 cm

13 cm

Answer: 397.66 un²

68.9 × 2 = 137.8

37.63 × 2 = 75.26

13 × 5.3 × 2 = 184.6

7.1 cm
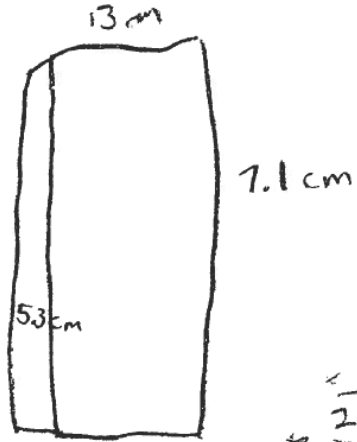
137.8 + 75.26 + 184.6 = 397.66

5.3 cm

13 cm

2

A closed box in the shape of a rectangular prism has a length of 13 cm, a width of 5.3 cm, and a height of 7.1 cm.

Draw a net of the box and find its surface area in square centimeters.

Show your work.

$$5.3 \times 13$$
$$\overline{15\,9}$$
$$+\,5\,3\,0$$
$$\overline{68.9}$$

$$13 \times 7.1$$
$$1\,3$$
$$+9\,1\,0$$
$$\overline{92.3}$$

13 cm

7.1 cm

5.3 cm

$$7.1 \times 5.3$$
$$2\,1\,3$$
$$+3\,5\,5\,0$$
$$\overline{37.63}$$

$$37.63$$
$$37.63$$
$$68.9$$
$$68.9$$
$$92.3$$
$$+92.3$$
$$\overline{396.6}$$

Answer: __396.6 square cm.__