



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

Practice Test Resource Material

Grade 6

Mathematics

New England Common Assessment Program

Practice Test Resource Material

Grade 6 Mathematics

Session 1—Non-Calculator

Position Number	Item Type	Correct Answer	Content Strand	GLE Stem Number	Depth-of-Knowledge Level
1	Multiple-choice (1 pt.)	C	Functions & Algebra	1	2
2	Multiple-choice (1 pt.)	B	Geometry & Measurement	6	2
3	Multiple-choice (1 pt.)	A	Numbers & Operations	2	2
4	Multiple-choice (1 pt.)	C	Data, Statistics & Probability	1	2
5	Short-answer (1 pt.)	N/A	Functions & Algebra	3	2
6	Short-answer (2 pts.)	N/A	Numbers & Operations	4	2
7	Short-answer (2 pts.)	N/A	Numbers & Operations	3, 4	3

Session 2—Calculator Active

Position Number	Item Type	Correct Answer	Content Strand	GLE Stem Number	Depth-of-Knowledge Level
8	Multiple-choice (1 pt.)	C	Functions & Algebra	1	2
9	Multiple-choice (1 pt.)	B	Numbers & Operations	2	1
10	Multiple-choice (1 pt.)	C	Functions & Algebra	4	1
11	Multiple-choice (1 pt.)	B	Data, Statistics & Probability	5	2
12	Short-answer (1 pt.)	N/A	Numbers & Operations	3	1
13	Constructed-response (4 pts.)	N/A	Geometry & Measurement	6	3

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Non-Calculator Short-Answer Item (2 points)

6 In an orchard there are only Cortland apple trees and Macintosh apple trees. There are a total of 168 apple trees.

- In the orchard there are 6 rows of Cortland apple trees and 8 rows of Macintosh apple trees.
- Each row in the orchard contains the same number of apple trees.

What is the total number of **Cortland apple trees** in the orchard? Show your work or explain how you know.

Scoring Guide

Score	Description
2	Student correctly answered 72 Cortland Apple Trees , with work shown or explanation given.
1	Student gives correct answer, but no work or explanation. OR Work or explanation shows correct strategy in solving the problem, but there may be a computation error.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

$$6 + 8 = 14 \text{ rows}$$

$$168 \div 14 = 12 \text{ apple trees in each row}$$

$$6 \times 12 = 72 \text{ Cortland apple trees}$$

* All students were provided the same amount of space in which to write their answers. For the purposes of this document, extraneous white space was removed from each student work sample to save space.

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Sample 2-Point Response A

There are seventy-two Cortland apple trees in the apple orchard.

$$\begin{array}{r}
 14 \overline{) 168} \\
 \underline{140} \\
 28 \\
 \underline{28} \\
 0
 \end{array}$$

$$\begin{array}{r}
 10 \\
 2 \\
 \hline
 12
 \end{array}$$

$$\begin{array}{r}
 112 \\
 \times 6 \\
 \hline
 72
 \end{array}$$

Sample 2-Point Response B

There are 72 Cortland apple trees.

15
8

90

12 in each row x 6 is 72.

26 = Cortland, 28 = McIntosh

96
72

168

12
60

72

16
80

96

30
60

90

120

★ 168 ★

← →

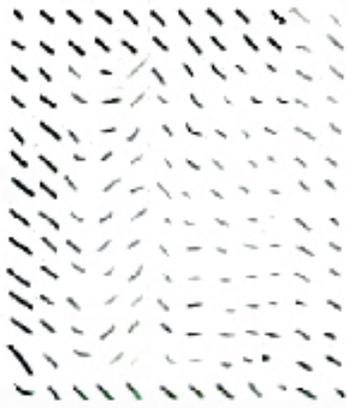
≡ 210

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Sample 1-Point Response A

168 apples

72 Cortland apple trees



$$\begin{array}{r} 14 \\ \times 12 \\ \hline 28 \\ + 140 \\ \hline 168 \end{array}$$

Sample 1-Point Response B

72 apples

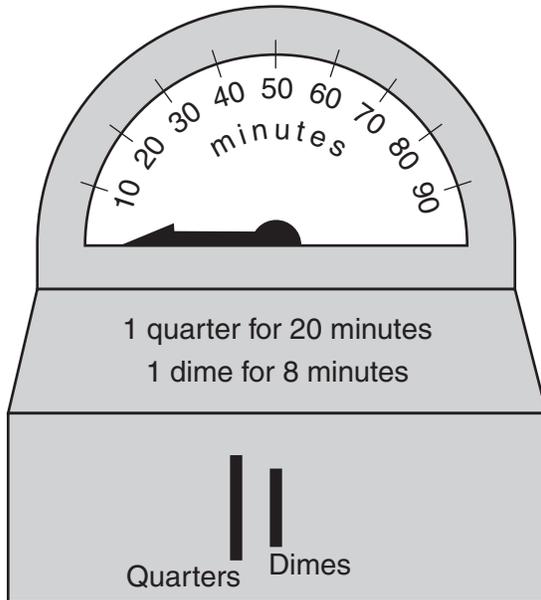
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Calculator-Active Short-Answer Item (2 points)

- 7 Look at this parking meter.



When the meter is at 0 minutes, what is the **least** amount of money Mr. Blaine will have to pay to park at the meter for 70 minutes? Show your work or explain how you know.

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Calculator-Active Short-Answer Item (2 points)

Scoring Guide

Score	Description
2	Student correctly answered \$0.90 , with work shown or explanation given.
1	Student gives correct answer, but no work or explanation. OR Work or explanation shows correct strategy in solving the problem, but there is a computation error.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

Quarters	Dimes	Minutes	Amount
4	0	$4 \times 20 = 80$	\$1.00
3	2	$(3 \times 20) + (2 \times 8) = 76$	\$0.95
2	4	$(2 \times 20) + (4 \times 8) = 72$	\$0.90
1	7	$(1 \times 20) + (7 \times 8) = 76$	\$0.95
0	9	$9 \times 8 = 72$	\$0.90

So the least amount paid is 90¢.

* All students were provided the same amount of space in which to write their answers. For the purposes of this document, extraneous white space was removed from each student work sample to save space.

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Sample 1-Point Response A

$\$10 = 8 \text{ min.}$
 $\$10 \quad \$20 \quad \$30 \quad \$40 \quad \$50 \quad \$60 \quad \$70 \quad \80
min. 8, 16, 24, 32, 40, 48, 56, 72

\$80

Sample 1-Point Response B

90¢

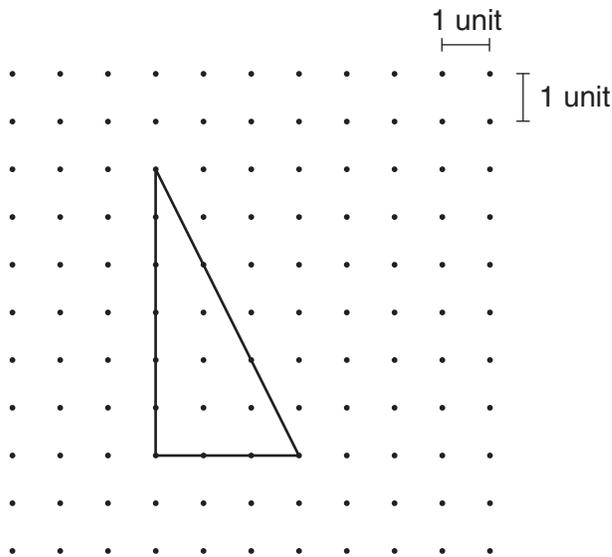
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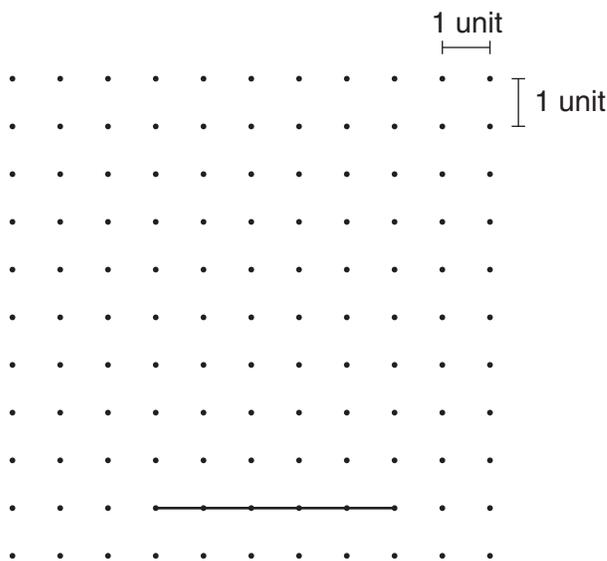
Mathematics

Calculator-Active Constructed-Response Item (4 points)

- 13 Sabrina drew the right triangle shown below.



- What is the area of Sabrina's triangle? Show your work or explain how you know.
- Luke wants to draw a right triangle with an area of 20 square units. He first drew the base of his triangle, as shown below.



What should be the height of Luke's triangle? Show your work or explain how you know.

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Mathematics

Calculator-Active Constructed-Response Item (4 points)

Scoring Guide

Score	Description
4	4 points.
3	3 points.
2	2 points.
1	1 point.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

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Calculator-Active Constructed-Response Item (4 points)

Training Notes:

Part a: 2 points for the correct answer, **9 (square units)**, with work shown or explanation given.

OR

1 point for the correct answer, no work shown or explanation given.

or

for correct strategy shown in solving the problem, but there is a computation error.

Part b: 2 points for the correct answer, **8 (units)**, with work shown or explanation given.

OR

1 point for the correct answer, no work shown or explanation given.

or

for correct strategy shown in solving the problem, but there is a computation error.

NOTES:

- For part a, a student can get a strategy point for “counting squares” only if student correctly indicates the partial squares that add to 1 unit and does not use terminology such as “halves” or “quarters”.
- For part b, a student can NOT get a strategy point for “counting squares”.
- If student uses unit labels incorrectly (i.e. uses units of length for area or vice-versa), do not award a score of 4, otherwise do not penalize.

Sample Response:

Part a: The base is 3 units and height is 6 units. The area of the rectangle is 18 square units. The triangle is half the area of the rectangle. So the triangle has an area of 9 square units.

Part b: Area of the rectangle is twice the area of the triangle, so the area of the rectangle would be 40 square units. Since the base is 5 units, the height would be 8 units.

or

Student does it by guess and check and shows that when the height is 8 the area is 20.

* All students were provided the same amount of space in which to write their answers. For the purposes of this document, extraneous white space was removed from each student work sample to save space.

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Sample 4-Point Response

A. $\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$

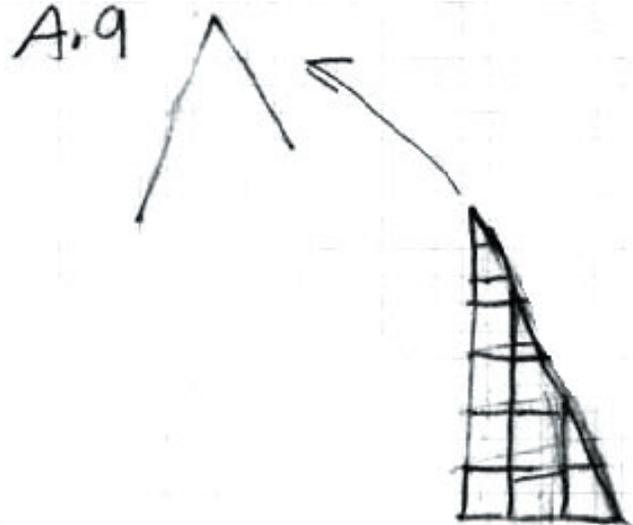
$$\frac{1}{2} \times 3 \times 6 = 9 \text{ sq. units}$$

B $\frac{1}{2} \times 5 \times H = 20 \text{ sq. units}$ $\frac{1}{2} \text{ of } 5 = 2.5$
 $8 \times 2.5 = 20$

8 units high

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Sample 3-Point Response



A hand-drawn diagram on grid paper. On the right is a pyramid with a grid of horizontal and vertical lines. An arrow points from the top of the pyramid to a simple triangle on the left. The triangle is labeled 'A.9'.

A.9

B.8
B: = Base = 5

$5 \times 5 = 25$ or $2.5 \times 8 = 20$ sec if $5 \times 4 = 20$ but since you
dividing it by half it would double but since
the base can't change the height does,
so it would be 8 units.

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Sample 2-Point Response A

6 whole squares 6 half squares = 3 whole square



$$6 + 3 = 9$$

8 because the non equal side is fits together
like a puzzle. the area and has have all
equal squares. the area adds up to 8 way

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Sample 2-Point Response B

a. Sabrina's triangle's area is 9 units, I know because I counted them all.

b. Luke's triangle should be 8 units high. I know because I drew it and counted.

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Sample 1-Point Response

The area of Subcinas triangle is 9 units because you count up the number of squares.

Luke should make his triangle 7 units high because that will be 20 units

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Sample 0-Point Response A

Area 18. I multiplied the
length(6) x width(3) and got 18.

his height should be 5, because
 $4 \times 5 = 20$ and he wants his
area to be 20 so it had to
be 5 for his height.

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Sample 0-Point Response B

The area of Sabrina's triangle is 26 units² because that is how many times 1 unit goes into that triangle.

Luke's triangle should look like this because it has a right angle in it.

