NEW YORK STATE
COMPONENT RETEST

MATHEMATICS A
COMPONENT 4
MODULE 1

MONDAY, MAY 12, 2003

SCORING KEY
AND
RATING GUIDE

Multiple Choice Key

1	1
2	2
3	4
4	4
5	3
6	1

Math A Component Retest
May 2003
Component 4, Module 1

Key to Multiple-Choice Questions

(1)	1
(2)	2
(3)	4
(4)	4
(5)	3
(6)	1

Rubric

(7)

[4] 6 and a correct tree diagram or sample space is shown, such as {BW,BR,BY,BP,GW,GR,GY,GP,TW,TR,TY,TP}.

[3] A correct tree diagram or sample space is shown, but the number of combinations is not given, is incorrect, or is written as a fraction.

[2] An incorrect or incomplete tree diagram or sample space consisting of at least 6 combinations is shown, but the appropriate number of combinations is given based on the tree diagram or sample space.

[1] An incomplete tree diagram or sample space consisting of at least 6 combinations is shown, and the number of combinations is not given, is incorrect, or is written as a fraction.

or

[1] An incomplete tree diagram or sample space is shown consisting of less than 6 combinations, but the appropriate number of combinations is given based on the tree diagram.

or

[1] 6, but no sample space or tree diagram is shown.

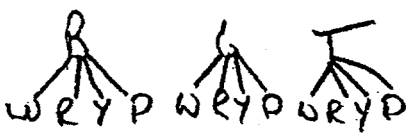
[0] A zero response is completely incorrect, irrelevant, or incoherent, or is a correct response that was obtained by an obviously incorrect procedure.

Part II

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Jennifer has three pairs of shorts: one blue (*B*), one green (*G*), and one tan (*T*). She also has four shirts: one white (*W*), one red (*R*), one yellow (*Y*), and one pink (*P*). Draw a tree diagram or list a sample space to show all possible combinations of one pair of shorts and one shirt.

If Jennifer wants to wear her white shirt or her yellow shirt, how many possible outfits consisting of one pair of shorts and one shirt can she wear?



6

SCORE POINT: 4

Part II

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Jennifer has three pairs of shorts: one blue (*B*), one green (*G*), and one tan (*T*). She also has four shirts: one white (*W*), one red (*R*), one yellow (*Y*), and one pink (*P*). Draw a tree diagram or list a sample space to show all possible combinations of one pair of shorts and one shirt.

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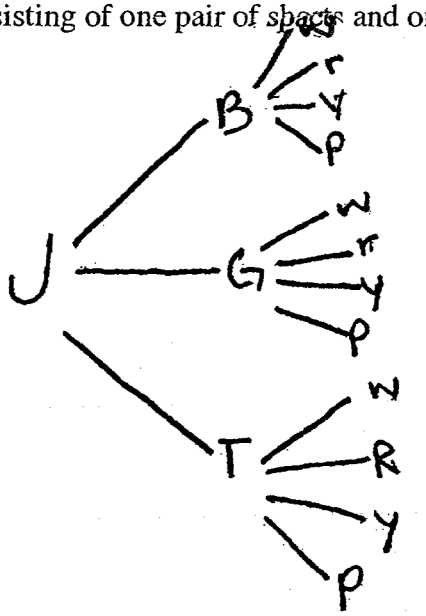


12

SCORE POINT: 3

Part II

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Jennifer has three pairs of shorts: one blue (*B*), one green (*G*), and one tan (*T*). She also has four shirts: one white (*W*), one red (*R*), one yellow (*Y*), and one pink (*P*). Draw a tree diagram or list a sample space to show all possible combinations of one pair of shorts and one shirt.

If Jennifer wants to wear her white shirt or her yellow shirt, how many possible outfits consisting of one pair of shorts and one shirt can she wear?

(B)(G)(T) (Y)

(B)(G)(T) (W)

She has a possibility of 6 outfits.

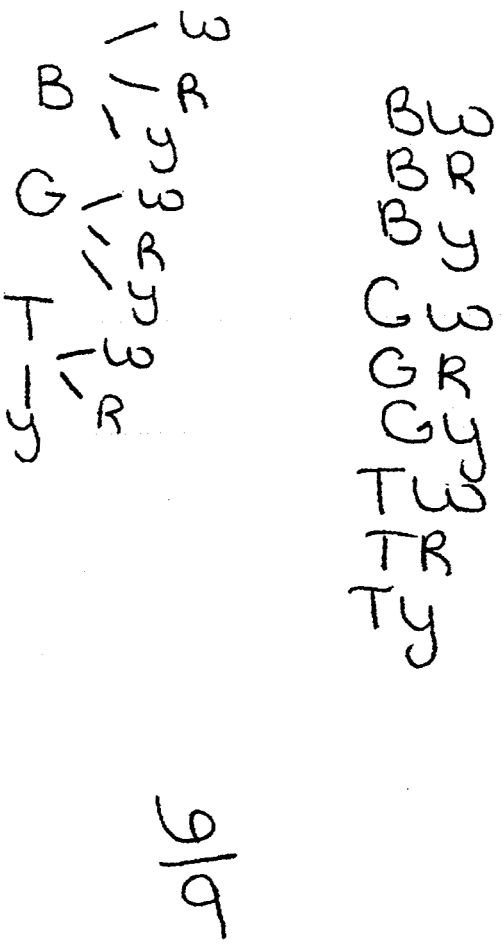
SCORE POINT: 2

Part II

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Jennifer has three pairs of shorts: one blue (*B*), one green (*G*), and one tan (*T*). She also has four shirts: one white (*W*), one red (*R*), one yellow (*Y*), and one pink (*P*). Draw a tree diagram or list a sample space to show all possible combinations of one pair of shorts and one shirt.

If Jennifer wants to wear her white shirt or her yellow shirt, how many possible outfits consisting of one pair of shorts and one shirt can she wear?



$\frac{6}{9}$

SCORE POINT: 1

Part II

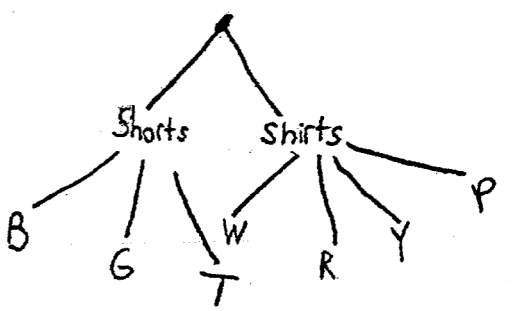
Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Jennifer has three pairs of shorts: one blue (*B*), one green (*G*), and one tan (*T*). She also has four shirts: one white (*W*), one red (*R*), one yellow (*Y*), and one pink (*P*). Draw a tree diagram or list a sample space to show all possible combinations of one pair of shorts and one shirt.

If Jennifer wants to wear her white shirt or her yellow shirt, how many possible outfits consisting of one pair of shorts and one shirt can she wear?

Shorts Shirts

B G T W R Y P



SCORE POINT: 0

Rubric

(8)

[4] ΔCAT and $\Delta C'A'T'$ are graphed and labeled correctly, and $C'(3,-3)$, $A'(8,-2)$, and $T'(5,1)$ are found.

[3] Both triangles are graphed correctly, but the coordinates of ΔCAT or $\Delta C'A'T'$ are not labeled or are labeled incorrectly.

or

[3] Both triangles are graphed and labeled, but one coordinate is graphed incorrectly.

[2] $\Delta C'A'T'$ is graphed and its coordinates are stated correctly, but ΔCAT is not graphed or labeled.

or

[2] ΔCAT is graphed incorrectly, but $\Delta C'A'T'$ is graphed appropriately, based on the incorrect ΔCAT, and both triangles are labeled appropriately.

or

[2] ΔCAT is graphed and labeled correctly, but $\Delta C'A'T'$ is reflected incorrectly (e.g., reflected in the y-axis), but coordinates and labels are appropriate.

[1] ΔCAT is graphed and labeled correctly, but $\Delta C'A'T'$ is not graphed or labeled or is graphed and labeled incorrectly.

or

[1] $\Delta C'A'T'$ is graphed correctly, but its coordinates are not stated, and ΔCAT is not graphed or is graphed incorrectly.

or

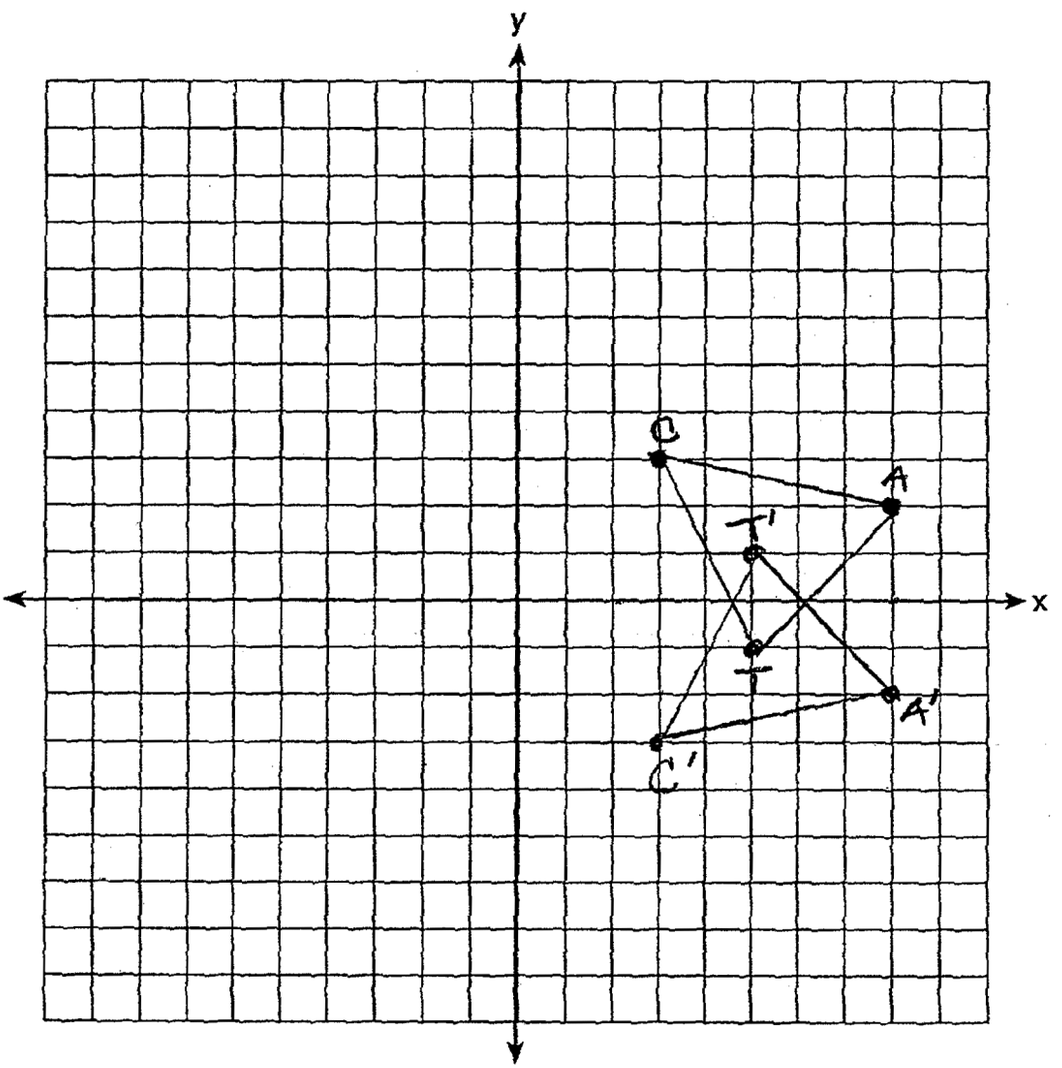
[1] ΔCAT is graphed incorrectly, but $\Delta C'A'T'$ is graphed appropriately, but the coordinates are not labeled or are labeled incorrectly.

or

[1] The coordinates $C'(3,-3)$, $A'(8,-2)$, and $T'(5,1)$ are given, but no work or graph is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent, or is a correct response that was obtained by an obviously incorrect procedure.

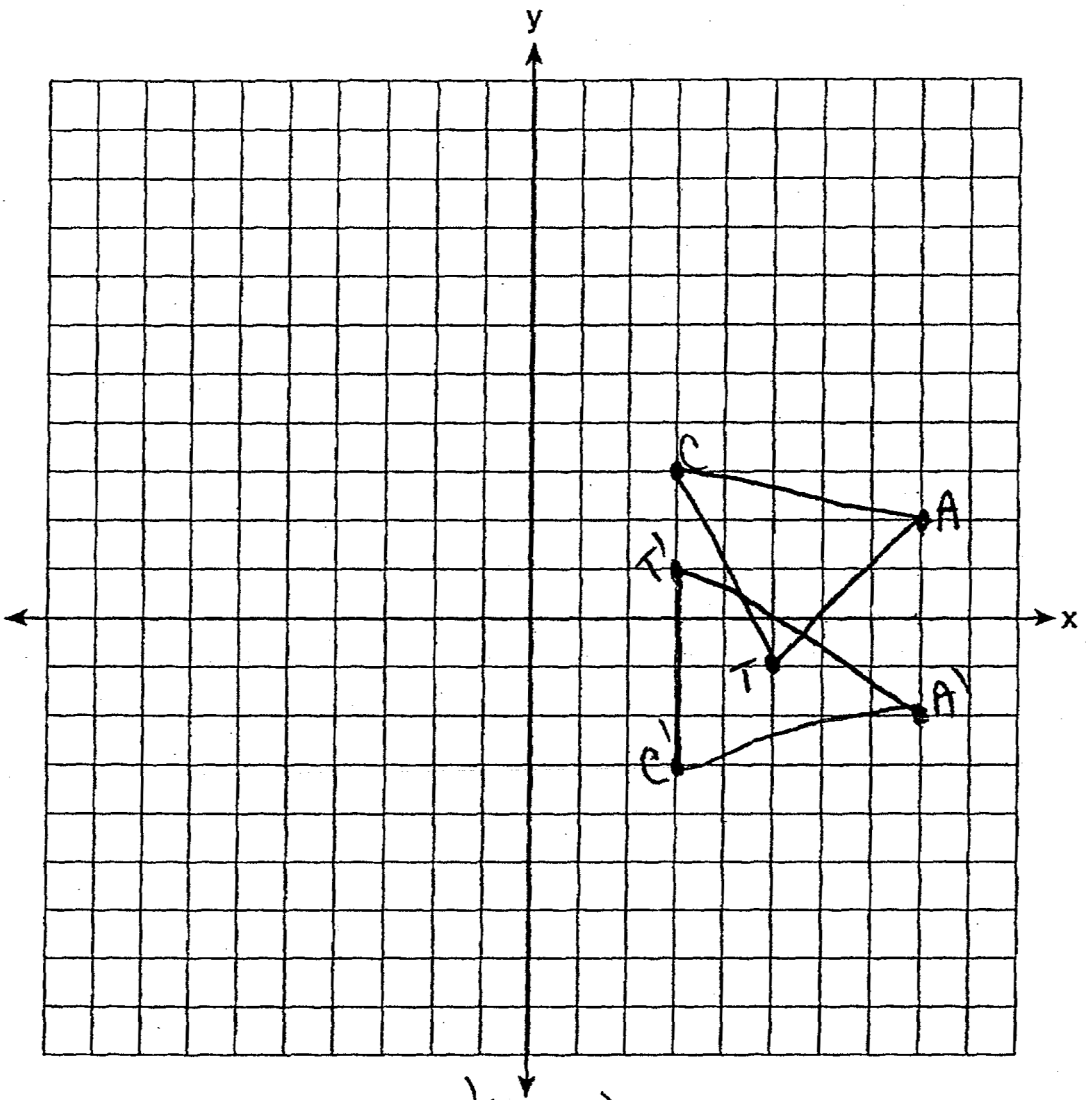
8 Triangle CAT has coordinates $C(3,3)$, $A(8,2)$, and $T(5,-1)$. On the accompanying set of axes, draw and label ΔCAT. Then graph and state the coordinates of $\Delta C'A'T'$, the image of ΔCAT after a reflection in the x-axis.



C'(3,-3)
A'(8,-2)
T'(5,1)

SCORE POINT: 4

8 Triangle CAT has coordinates $C(3,3)$, $A(8,2)$, and $T(5,-1)$. On the accompanying set of axes, draw and label ΔCAT. Then graph and state the coordinates of $\Delta C'A'T'$, the image of ΔCAT after a reflection in the x-axis.



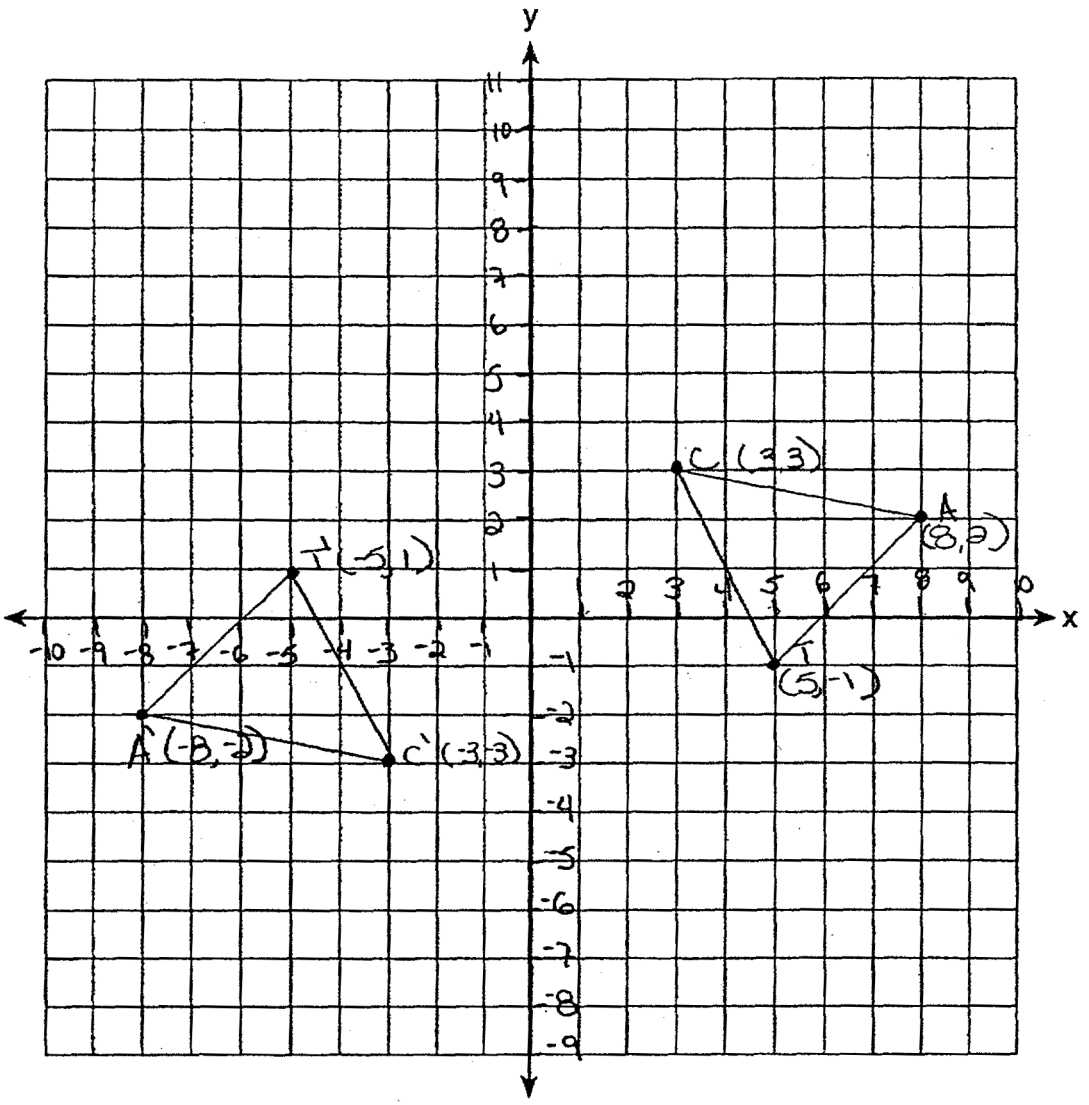
C(3,3) Reflect x-axis C'(3,-3)

A(8,2) Reflect x-axis A'(8,-2)

T(5,-1) Reflect x-axis T'(5,1)

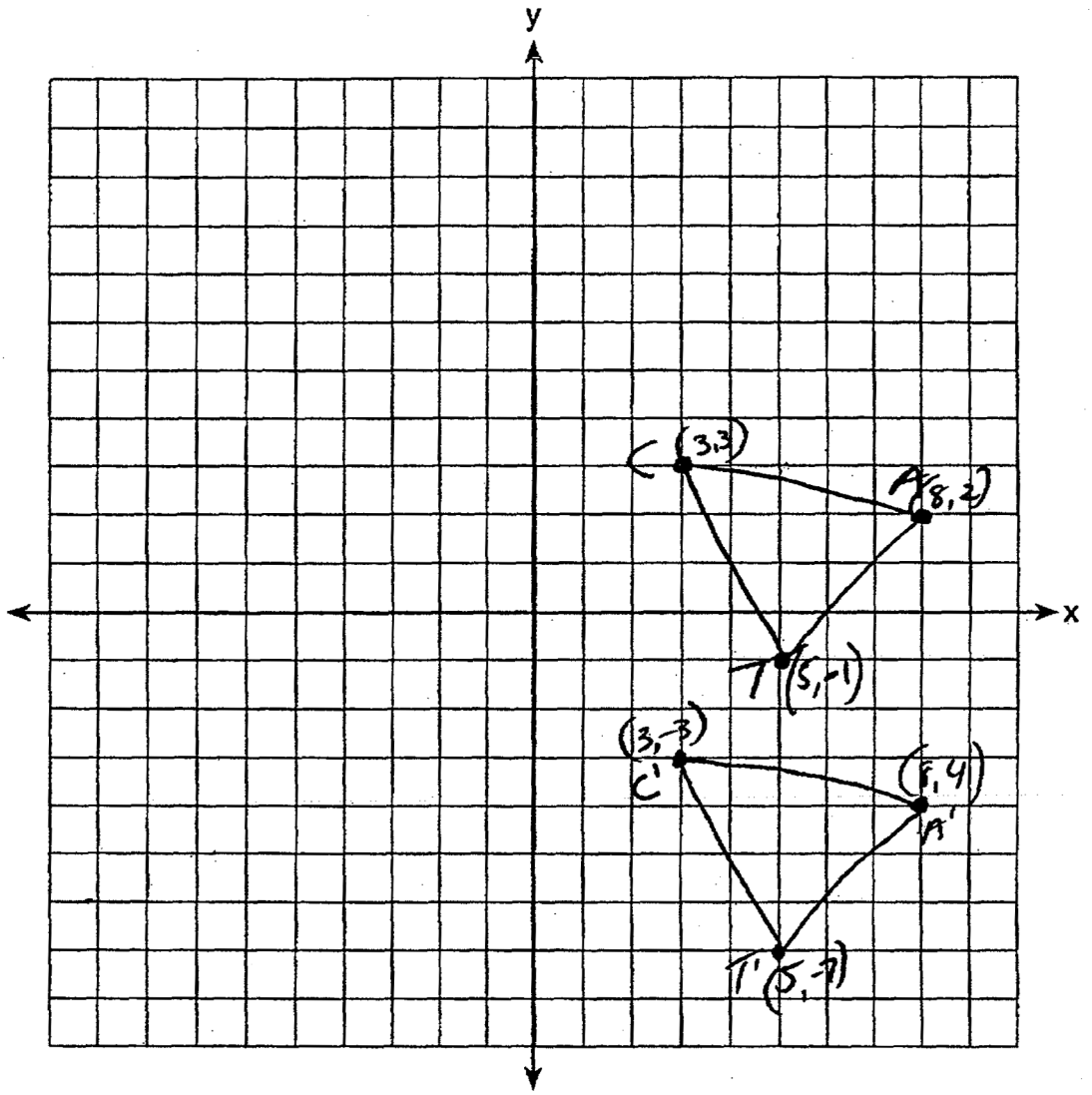
SCORE POINT: 3

8 Triangle CAT has coordinates $C(3,3)$, $A(8,2)$, and $T(5,-1)$. On the accompanying set of axes, draw and label ΔCAT. Then graph and state the coordinates of $\Delta C'A'T'$, the image of ΔCAT after a reflection in the x-axis.



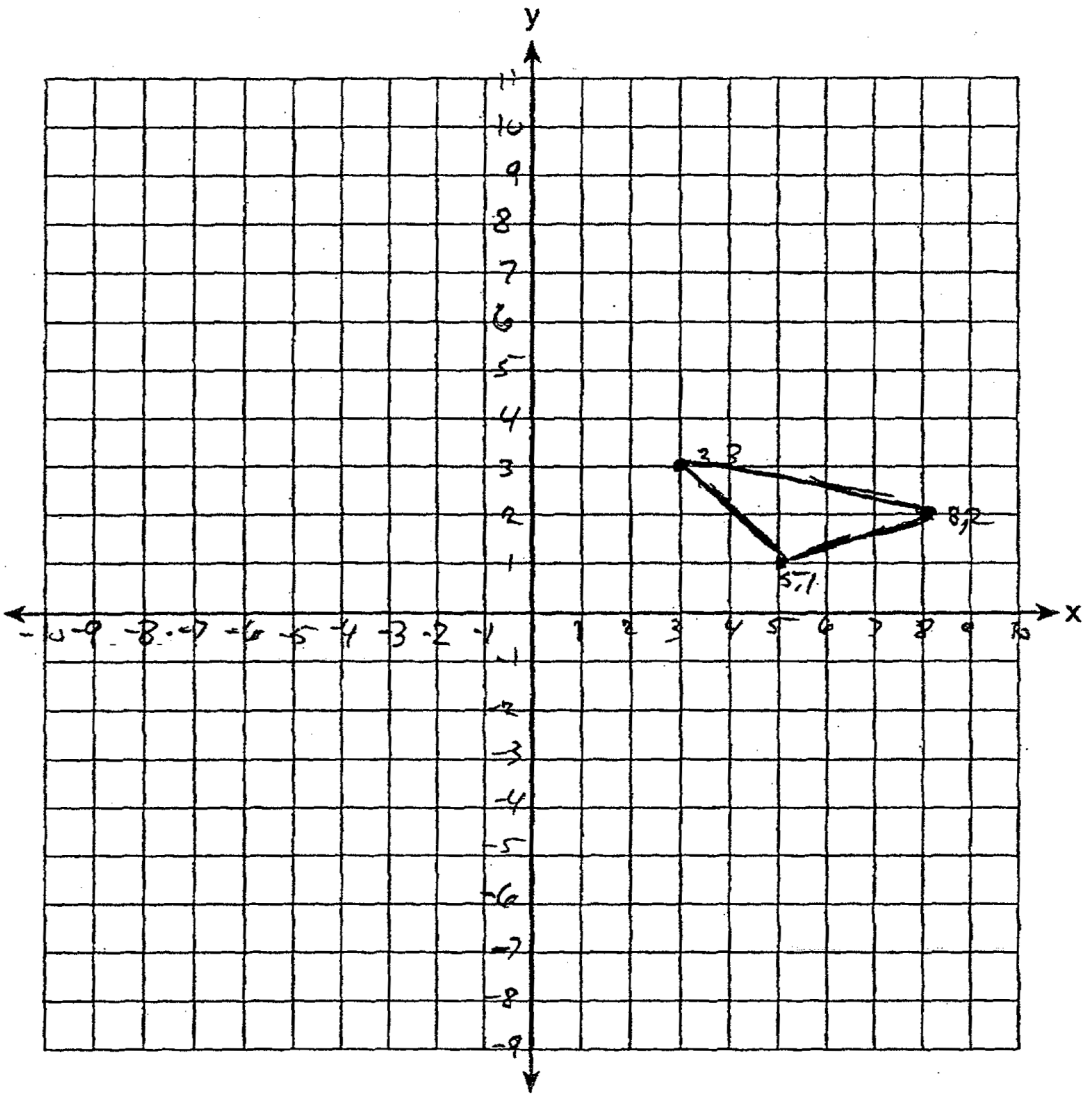
SCORE POINT: 2

8 Triangle CAT has coordinates $C(3,3)$, $A(8,2)$, and $T(5,-1)$. On the accompanying set of axes, draw and label ΔCAT. Then graph and state the coordinates of $\Delta C'A'T'$, the image of ΔCAT after a reflection in the x-axis.



SCORE POINT: 1

8 Triangle CAT has coordinates $C(3,3)$, $A(8,2)$, and $T(5,-1)$. On the accompanying set of axes, draw and label ΔCAT. Then graph and state the coordinates of $\Delta C'A'T'$, the image of ΔCAT after a reflection in the x-axis.



SCORE POINT: 0

Rubric

(9)

[4] 41 cars and 37 vans, and appropriate work is shown, such as $7(78 - v) + 11v = 694$ or a system of equations or trial and error with at least three trials and appropriate checks.

[3] 41 and 37, and appropriate work is shown, but the answers are not labeled or are labeled incorrectly.

or

[3] Appropriate work is shown, but one computational error is made.

or

[3] Appropriate work is shown, but only one variable is found correctly.

[2] Appropriate work is shown, but more than one computational error is made.

or

[2] The trial-and-error method is used to find the correct answers, but only two trials with appropriate checks are shown.

or

[2] An incorrect system of equations of equal difficulty is written, but it is solved appropriately, and appropriate numbers of cars and vans are found.

or

[2] A correct equation or system of equations is written and the number of cars and the number of vans are stated, but no work is shown.

[1] A correct equation or system of equations is written, but no further correct work is shown.

or

[1] 41 cars and 37 vans, but no work is shown.

[0] 41 cars or 37 vans, but no work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent, or is a correct response that was obtained by an obviously incorrect procedure.

9 A high school basketball team washed cars and vans to raise money. The cost of washing a car was \$7, and the cost of washing a van was \$11. If 78 vehicles were washed and \$694 was raised, how many cars and how many vans were washed?

x = # of cars

$78 - x$ = # of vans

$7x + 11(78 - x) = 694$

$7x + 858 - 11x = 694$

$858 - 4x = 694$

$-858 \quad -858$

$\frac{-4x}{-4} = \frac{-164}{-4}$

$x = 41$

$78 - (x) =$

$78 - 41 = 37$

41 cars, 37 vans

$7x + 11(78 - x) = 694$

$7(41) + 11(37) = 694$

$287 + 407 = 694$

$694 = 694$ ✓

SCORE POINT: 4

9 A high school basketball team washed cars and vans to raise money. The cost of washing a car was \$7, and the cost of washing a van was \$11. If 78 vehicles were washed and \$694 was raised, how many cars and how many vans were washed?

let x = number of cars
y = number of vans

$7x + 11x = 694$
$-7(x + y = 78)$

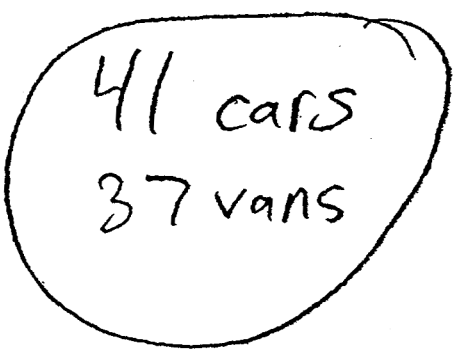
$7x + 11y = 694$
$-7x + 7y = -546$
$4y = 148$
$y = 37$

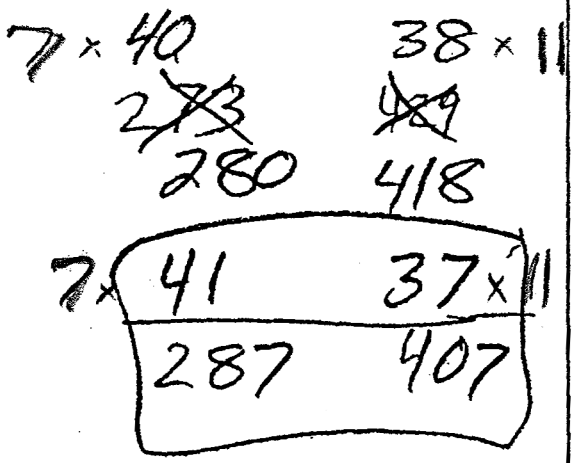
$x + 37 = 78$
$x = 44$

There were 44 cars washed and 37 vans washed.

SCORE POINT: 3

9 A high school basketball team washed cars and vans to raise money. The cost of washing a car was \$7, and the cost of washing a van was \$11. If 78 vehicles were washed and \$694 was raised, how many cars and how many vans were washed?





SCORE POINT: 2

9 A high school basketball team washed cars and vans to raise money. The cost of washing a car was $7, and the cost of washing a van was $11. If 78 vehicles were washed and $694 was raised, how many cars and how many vans were washed?

car = $7
van = $11

78 vehicles

41 cars = 41 × $7 = $287
37 vans = 37 × $11 = $407

78 vehicles = $694

SCORE POINT: 1

9 A high school basketball team washed cars and vans to raise money. The cost of washing a car was $7, and the cost of washing a van was $11. If 78 vehicles were washed and $694 was raised, how many cars and how many vans were washed?

$7.00 to wash a car.
$11.00 to wash a van.
78 vehicles washed
$694 raised
How many cars and vans washed?

7 + 11 = $18
$18 x 78 = 1,404
1,404 cars + vans washed

van
car

SCORE POINT: 0