

UNIT 6 and 7 - System of Equations and Congruency Assessment

Name Exemplar PER _____ DATE _____

ACED2	AREIC6	GCO7	GCO8

Computation

4	3	2	1
Response has no recall errors, <i>minimal</i> procedural errors* and no conceptual errors**	Response has no recall errors, minimal procedural errors and <i>minimal</i> conceptual errors	Response has no recall errors, but has several procedural errors <u>OR</u> several conceptual errors	Recall errors exist <u>OR</u> Steps taken are not related to problem <u>OR</u> Response left blank

Written Responses

4	3	2	1
Response is written in a complete sentence and uses appropriate academic vocab	Response is written in a complete sentence, and minimal errors exist in use of academic vocab	Response is not written in a complete sentence <u>OR</u> no academic vocab	Concept of response is not related to problem <u>OR</u> Response is left blank

***Procedural errors** are mistakes made in the math

****Conceptual errors** are mistakes made in the steps one take

1. (ACED2) Explain your answer choice in the space below.

Lisa has a job working for $\$16$ per hour. She takes the bus to and from work, which costs a total of $\$3.50$ each day she works. Since her work schedule varies she doesn't work the same number of hours or days each week.

Which equation can be used to find m , the total amount in dollars Lisa earns in a month if she works d days and h hours?

A. $d = 16h - 3.5$ True, but does not calculate the month

$16 \times h =$ the amount she makes each day

B. $m = -3.5d + 16h$

$16h - 3.5 =$ the amount she keeps each day

C. $m = d(-3.5 + 16h)$

(after the bus rides)

D. $m = 16d - 3.5h$

C is the correct equation since we multiply $16h$ and -3.5 by d since she both makes money and spends money each day she works in a month.

2. (ACED2) Explain your answer choice in the space below.

Katelyn starts a job that pays $\$8.50$ per hour. Katelyn's manager says that if her job reviews are favorable, she can expect annual pay rate increases of $\$0.75$. Which equation represents the relationship between y , and pay per hour p ?

A. $y = 0.75p + 8.50$

B. $p = 0.75y + 8.50$

C. $p = 8.50y + 0.75$

D. $y = 8.50p + 0.75$

The starting value is 8.50 since that's her initial pay rate. That value increases by 0.75 a year so we must multiply 0.75 by the number of years she gets a favorable review.

3. (AREIC6) For the problem below, explain your answer in the space provided.

Consider the equation $4x - 3y = 8$. If possible, find a second linear equation to create a system of equations that has...

a. One solution. $y = 2x + 1$

$-3y = -4x + 8$
 $y = 4/3x - 8/3$

multiple answers exist!

If graphed, these equations would only intersect at one

b. Infinitely many solutions. $3y = 4x - 8$

Point since they have different slopes.

If graphed, these equations would create the same line since one is just a multiple of the other.

4. (AREIC6) For the problem below, show your work and explain your answer in the space below.

A test has 16 questions worth a total of 50 points. There are two types of questions on the test, essay and multiple choice.

- The essay questions are worth 11 points each.
- The multiple choice questions are worth 2 points each.

$x = \#$ of essay questions
 $y = \#$ of MC questions

Determine the number of essay questions and the number of multiple choice questions on the test.

Equation 1: $x + y = 16$

Equation 2: $11x + 2y = 50$

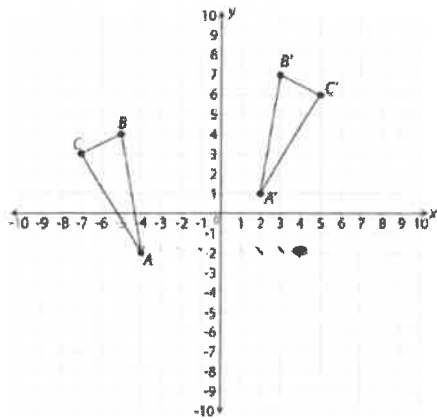
$$\begin{array}{r} -2x - 2y = -32 \\ 11x + 2y = 50 \\ \hline 9x = 18 \\ x = 2 \end{array}$$

$$\begin{array}{r} x + y = 16 \\ 2 + y = 16 \\ -2 \quad -2 \\ \hline y = 14 \end{array}$$

There are 14 multiple choice questions and 2 essay questions on the test.

5. (GCO7)

The design for a building has two triangular windows placed on a coordinate plane, as shown below.

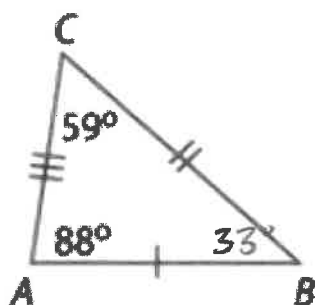


Use rigid motions to explain why the two windows are congruent.

Reflect $\triangle ABC$ over the y -axis and then translate two units to the left and 3 units up. Doing so will prove that the two triangles are congruent since all corresponding sides and angles will line up and are therefore congruent.

6. (GCO8)

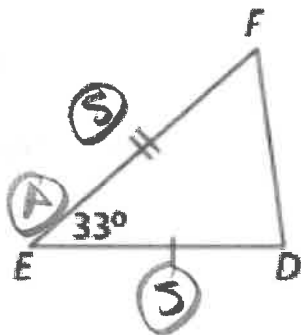
Triangle $\triangle ABC$ is shown below.



$$\begin{array}{r} 88^\circ \\ + 59^\circ \\ \hline 147^\circ \end{array} \quad \begin{array}{r} 180^\circ \\ - 147^\circ \\ \hline 33^\circ \end{array}$$

Determine if Triangle ABC is congruent to either of the triangles below. For each triangle, write a congruency statement and cite the Theorem that proves their congruency.

a.)



Congruency Statement

$$\underline{\triangle ABC \cong \triangle DEF}$$

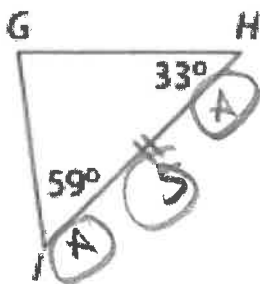
Congruency Theorem

$$\underline{SAS}$$

Series of Rigid Transformations

Reflect $\triangle ABC$ over \overline{CA} and then translate it down and to the right.

b.)



Congruency Statement

$$\underline{\triangle ABC \cong \triangle GHI}$$

Congruency Theorem

$$\underline{ASA}$$

Series of Rigid Transformations

Reflect $\triangle ABC$ over \overline{AB} and then translate it down.