Math Grade 10 E
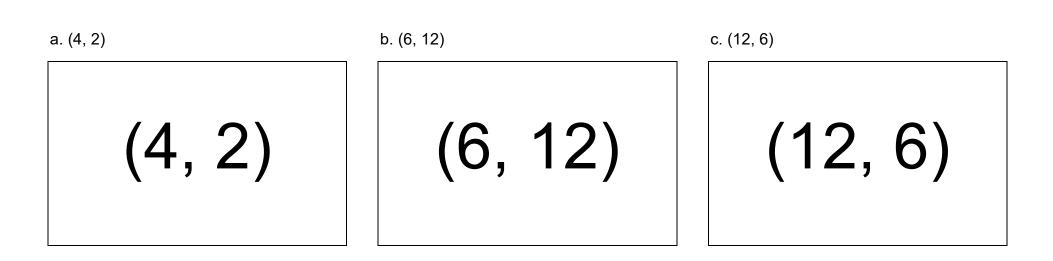
Grade Level Standard(s):

KY.HS.G.23

Materials:
- Math 10 E Rachel's Errands Graph A
- Math 10 E Formula Sheet
- Math 10 E Attainment Task Questions for Student Use

Response Code:
- Indicate the answer provided by the student.

Text Coding:
- "Quotation marks" indicate the script that the teacher should read to the student.
- *Italicized text* provides further direction for the test administrator.
- Words in parenthesis ( ) are optional; they may replace or be read in addition to the word(s) immediately preceding.

a. (4, 2)

(4, 2)

b. (6, 12)

(6, 12)

c. (12, 6)

(12, 6)

Before beginning task administration, please ensure that all conditions specified in the administration protocol (starting on page 10 of the Administration Guide Overview and Attainment Task Administration) have been met. Inform the student that the task is about to start by saying, "We are about to start the task, and I am going to ask you some questions."
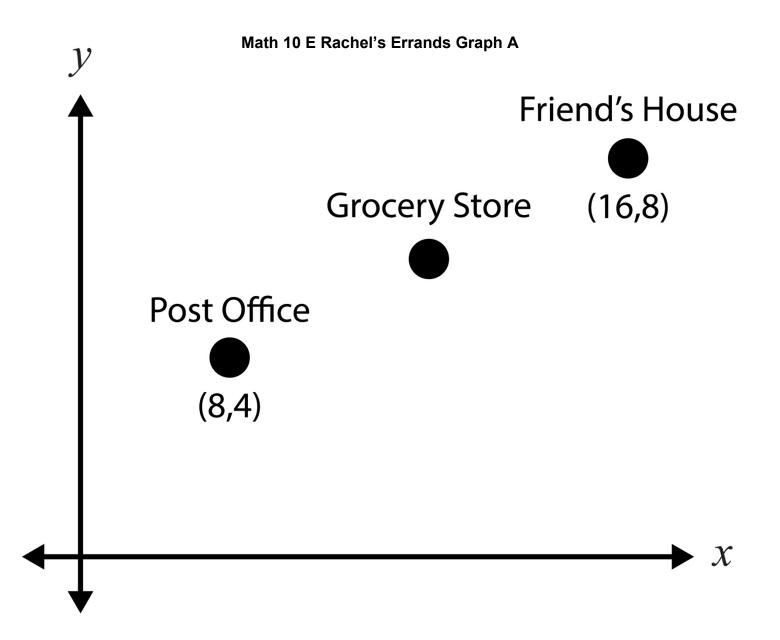
All questions from this task are available for presentation to the student in the supplemental material Math 10 E Attainment Task Questions for Student Use.

Present the student with Math 10 E Rachel's Errands Graph A and Math 10 E Formula Sheet, Midpoint Formula.

"Rachel is completing errands on her way to her friend's house. The grocery store is the midpoint between the post office and Rachel's friend's house."

3. "Use the midpoint formula to determine the coordinates of the grocery store."

Response Option	Response Rationale
a. (4, 2)	*The student attempts to use the midpoint formula but incorrectly subtracts x_1 from x_2 and y_1 from y_2 and then divides by 2.*
b. (6, 12)	*The student attempts to use the midpoint formula but incorrectly adds x and y coordinates for each of the points (instead of adding the x coordinates from each point and the y coordinates from each point), and then divides by 2.*
c. (12, 6) **(Correct)**	*The student describes the effect of the translation on the two-dimensional figures using coordinates.*
Depth of Knowledge (DOK) 2	

Math 10 E Rachel's Errands Graph A

Math 10 E Formula Sheet

Midpoint Formula: $\left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2}\right)$

Math 10 E Attainment Task Questions for Student Use

3. Use the midpoint formula to determine the coordinates of the grocery store.

Kentucky Academic Standard: KY.10.G.23 Find measurements among points within the coordinate plane.
a. Use points from the coordinate plane to find the coordinates of a midpoint of a line segment and the distance between the endpoints of a line segment. b. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
MP.2, MP.8

Alternate Assessment Target: *a. Limit to midpoint and endpoints with coordinates within negative 20 and 20. b. Excluded for assessment.*

Student Group	Number of Students*	Percent Correct
All Students	531	50.47%
Gender		
Female	186	50.54%
Male	345	50.43%
Ethnicity		
African American	70	44.29%
American Indian or Alaska Native	<10	Not Reported
Asian	12	50.00%
Hispanic of Latino	<10	Not Reported
Native Hawaiian of Pacific Islander	<10	Not Reported
White (Non-Hispanic)	398	52.01%
Two or More Races	48	45.83%
English Learner	26	53.85%
Economically Disadvantaged	409	49.63%

*Number of Students that attempted the item