Assignment: Graphing Linear Functions: Slope-intercept and Standard Forms

Suppose you are going on a geocaching adventure to find a cache that your friend has hidden. Your friend has provided you with some clues that will help you discover what the cache contains and where it might be. Follow the directions in each clue description below.

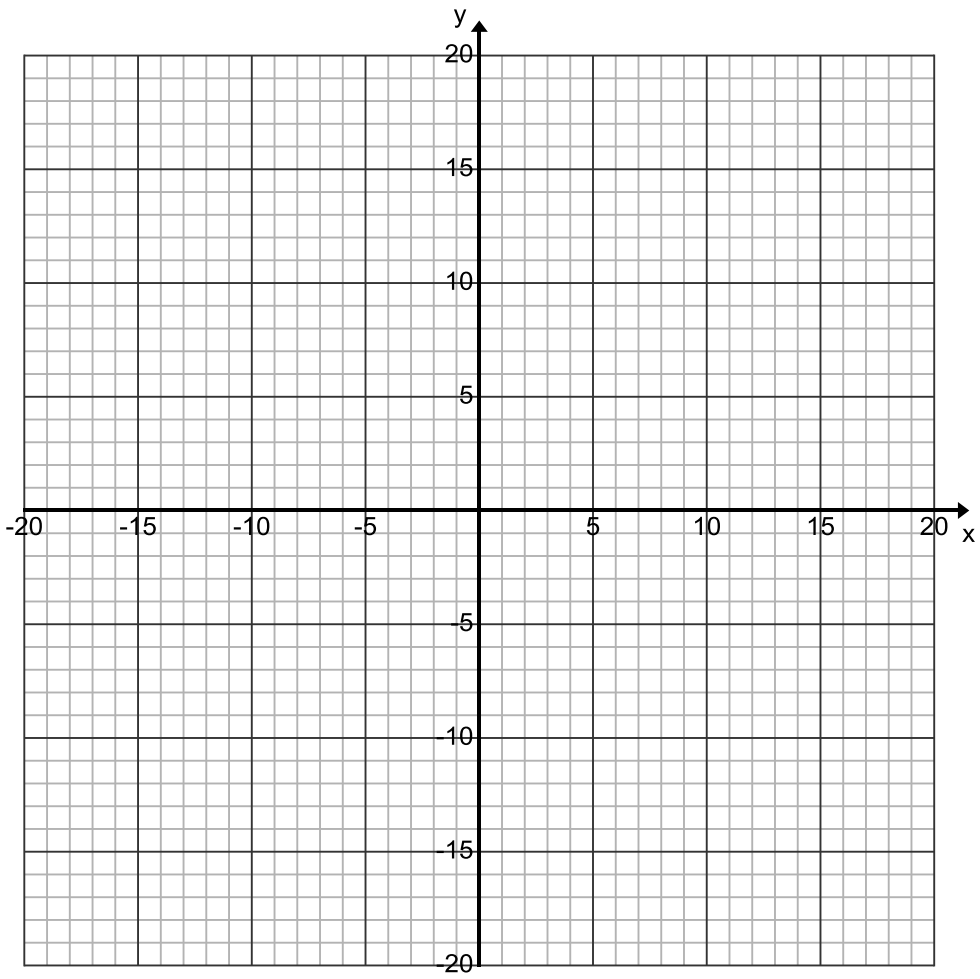
Clue #1: The theme of the cache is "Superheroes." Carefully graph the four lines with the following equations on the coordinate plane below to see the shape of the item.

A. $y = 2x + 13$

B. $2x - y = 17$

C. $y = -\frac{1}{2}x + 13$

D. $x + 2y = -14$



Clue #2: The item in the cache is thin, and you can fold it or bend it. Just like the lines you graphed intersect at four corners, the item also has four corners. The coordinates of the cache location correspond to one of the points where the four lines intersect. Identify the coordinates of the points where each pair of lines intersect. Write your answers as ordered pairs in (*x*, *y*) form.

A. Intersection of $y = 2x + 13$ and $x + 2y = -14$:

B. Intersection of $y = 2x + 13$ and $y = -\frac{1}{2}x + 13$:

C. Intersection of $2x - y = 17$ and $x + 2y = -14$:

D. Intersection of $2x - y = 17$ and $y = -\frac{1}{2}x + 13$:

Clue #3: The item in the cache has several pages and has the same shape as the geometric shape created by the intersecting lines. What is the shape of the item? Based on all the clues, what do you think the item is?

Think about this! What item(s) would you place in a cache and where might you hide it? Write 1-2 sentences in the space below to describe your geocaching idea.

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