**Reflections (Section 9-1)**





|  |  |
| --- | --- |
| 8 |  |
|  | ***A*** |
| 6 | ***B*** |
| 4 |  |
| 2 |  |
|  | ***C*** |

|  |  |  |  |
| --- | --- | --- | --- |
| 10 | 5 | 5 | 10 |

~~2~~

~~4~~

~~6~~

~~8~~

**Instructions:**

Use the table on the next page. For #2-#5, **use different colors.**

1. Write down the coordinates of A, B, C in column 1
2. Reflect triangle ABC over x axis. Label the new coordinates: A’, B’ C’. Write down the coordinates in column 2.
3. Reflect triangle ABC over y axis. Label the new coordinates: A’’, B’’, C’’. Write down the coordinates in column 3.
4. Reflect triangle ABC over the line y-x. Label the new coordinates: A’’’, B’’’, C’’’. Write down the coordinates in column 4.
5. Reflect triangle ABC over the origin. Label the new coordinates: A’’’’, B’’’’, C’’’’. Write down the coordinates in column 5.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Original | Reflected over | Reflected over | Reflected over | Reflected over |
| Coordinates | the x axis | the y axis | the line y=x | the origin |
|  |  |  |  |  |  |
| A ( | A’ ( | A’’ ( | A’’’ ( | A’’’’ ( |
|  |  |  |  |  |  |
| B ( | B’ ( | B’’ ( | B’’’ ( | B’’’’ ( |
|  |  |  |  |  |  |
| C ( | C’ ( | C’’ ( | C’’’ ( | C’’’’ ( |
|  |  |  |  |  |  |
|  | Write down | Write down | Write down | Write down |
|  | observations | observations | observations | observations |
|  | between points: | between points: | between points: | between points: |
|  | A & A’ | A & A’’ | A & A’’’ | A & A’’’’ |
|  | B & B’ | B & B’’ | B & B’’’ | B & B’’’’ |
|  | C & C’ | C & C’’ | C & C’’’ | C & C’’’’ |
|  |  |  |  |  |  |

**Properties for Reflection**

|  |  |  |
| --- | --- | --- |
|  | **Property** | **True of False** |
|  |  |  |
| a. | Distance is preserved. In other words, lines are taken to lines, and |  |
|  | line segments to line segments of the same length. |  |
|  |  |  |
| b. | Orientation is preserved. In other words, order of points is |  |
|  | preserved. |  |
|  |  |  |
| c. | Angle measure is preserved. In other words, angles are taken to |  |
|  | angles of the same measure. |  |
|  |  |  |
| d. | Collinearity is preserved. In other words, if three points lie on the |  |
|  | same line, then their images lie on the same line. |  |
|  |  |  |
| e. | Betweeness is preserved. In other words, if B is between A and C |  |
|  | on a line, then B’ is between A’ and C’ on the image. |  |