Review of Vertical and Horizontal Lines

The equation x = 5 is a **vertical line. The equation means that the line goes through the x-axis at 5; a vertical line would go through the x-axis, not a horizontal line.

The equation y = 2 is a **horizontal line. The equation means that the line goes through the y-axis at 2.

Notice in horizontal and vertical line equations there is only one letter. If you ever see an equation of a line with only one variable, you know right away that it is either vertical or horizontal line.

SLOPE

The slope of all **horizontal lines** is 0.

The reason for this is that horizontal lines would have 0 in the numerator, which is always 0. $\frac{0}{5} = 0$

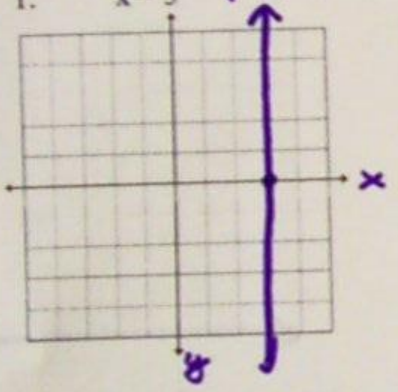
The slope of all **vertical lines** is undefined.

The reason for this is that vertical lines have 0 in the denominator, which is always undefined.

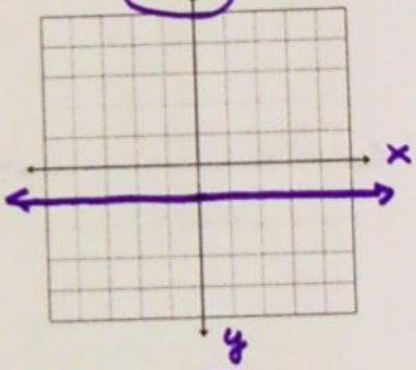
$\frac{5}{0} = undefined$

Graph the following.

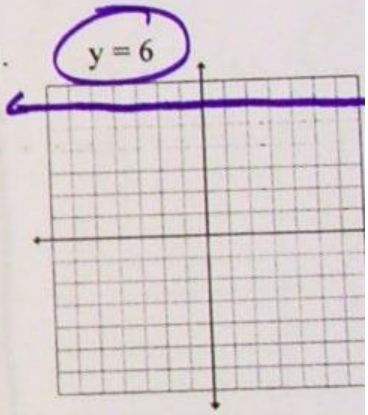
1. x = 3 Vertical



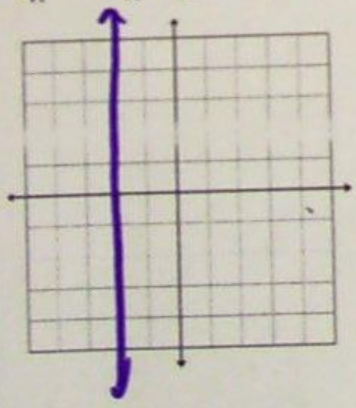
2. y = -1 Horizontal



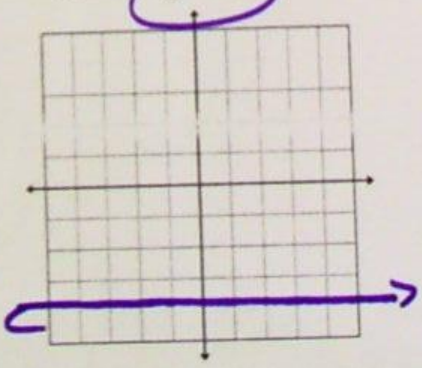
3. y = 6



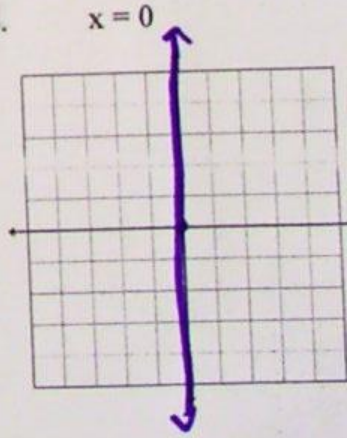
4. x = -2



5. y = -4



6. x = 0

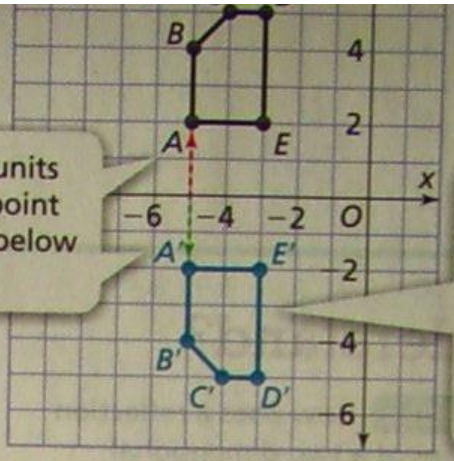


7. What type of line is parallel to a horizontal line? horizontal line

8. What type of line is perpendicular to a horizontal line? vertical line

nage after a reflection across the *x*-axis.

raw and label the vertices of polygon
'B'C'D'E'.



Since point *A* is 2 units above the *x*-axis, point *A'* will be 2 units below the *x*-axis.

The corresponding side lengths and angle measures remain the same but their positions and orientations are different.

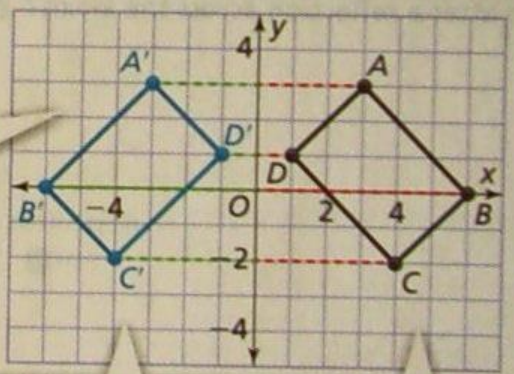
It!

ateral *KLMN* has vertices at *K*(2, 6), *L*(3, 8), *M*(5, 4), and *N*(3, 2). It is d across the *y*-axis, resulting in quadrilateral *K'L'M'N'*. What are the ates of point *N'*?

LE 3 Describe a Reflection

rule that describes the reflection that allelogram *ABCD* onto parallelogram

A reflection maps every point of *ABCD* to the corresponding point of *A'B'C'D'*.



Each point of preimage *ABCD* is the same distance from the line of reflection as the corresponding point of image *A'B'C'D'*.

gram *A'B'C'D'* is the image of parallelogram er a reflection across the *y*-axis.

ralize When reflecting across the he *y*-coordinate of the vertex of the emains the same and the *x*-coordinate pposite. $(x, y) \rightarrow (-x, y)$ MP.8

It!

ABCDE is reflected across the line $x = -2$. Graph and label e *A'B'C'D'E'*. Is $m\angle A = m\angle A'$? Explain.