Script

Example: Parallelograms: Properties of Their Diagonals

Problem:

Find the value of a and b in parallelogram WXYZ. WM is equal to 12, MY equals 5b plus 2, ZM equals 5, and MX equals negative 3a plus 2.

Solution:

Recall, diagonals of a parallelogram bisect each other. Therefore, segment ZM is congruent to segment MX and segment WM is congruent to segment MY.

If segment ZM is equal to segment MX, solve the equation 5 equals negative 3a plus 2 to find the value of a.

Subtract 2 from both sides of the equation.

3 equals negative 3a. Divide both sides by negative 3.

Negative 1 equals a.

If segment WM is equal to segment MY, solve the equation 12 equals 5b plus 2.

Subtract 2 from both sides of the equation.

10 equals 5b. Divide both sides of the equation by 5.

2 equals b