Finding the Equation of a Line Passing through Two Points

Find the equation of the line that passes through the points R(1,4) and S(4,-2).

Procedure:

1. Write $y = ax + b$
2. Find "a" using $a = \frac{y_2 - y_1}{x_2 - x_1}$
3. Find "b" using a given point
4. Write the equation of the line.

Solution: R(1,4) S(4,-2)

1. $y = ax + b$

2. $a = \frac{-2-4}{4-1} = \frac{-6}{3} = -2$

$y = -2x + b$

3. $4 = -2(1) + b$

$4 = -2 + b$

$6 = b$

4. $y = -2x + 6$