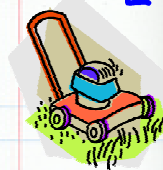


## Linear Inequality Applications

**Summer Job** You offer to mow your neighbors' lawns for \$20 or to wash their cars for \$10. Your goal is to earn at least \$1500 this summer.

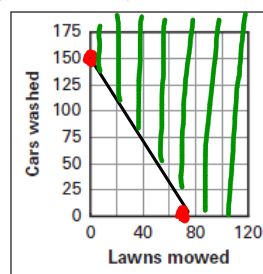


Write and graph an inequality that represents the possible number of lawns ( $x$ ) you would have to mow and cars ( $y$ ) that you would have to wash in order to reach your goal.

$$20x + 10y \geq 1500$$

$$\begin{array}{r|l} x & y \\ \hline 0 & 150 \\ 75 & 0 \end{array}$$

$$\begin{array}{r} 20x = 1500 \\ \hline 20 \quad 20 \\ x = 75 \end{array}$$



What are the coordinates of mowing 50 lawns and washing 65 cars?

Is that point a solution to the inequality?

$$(50, 65)$$

$$20x + 10y \geq 1500$$

$$20(50) + 10(65) \geq 1500 ?$$

$$1000 + 650 \geq 1500 \text{ YES.}$$



It costs \$2 in gas for each lawnmowing job and \$1.50 in supplies for each car wash. Explain how you would modify the inequality if your goal is to make a *profit* of \$1200?

$$18x + 8.50y \geq 1200$$