

Inequality Application + Absolute Value Inequality

You sell x T-shirts for \$15 each and y caps for \$10 each. Write and graph an inequality describing how many shirts and caps you must sell to exceed \$1800 in sales.

$$15x + 10y > 1800$$

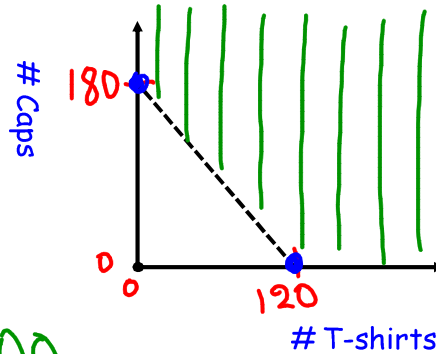
$$\begin{array}{r|l} x & y \\ \hline 0 & 180 \\ 120 & 0 \end{array}$$

Explain how you can modify this inequality to describe how many shirts and caps you must sell to exceed \$600 in profit if you make a 40% profit on shirts and a 30% profit on caps.

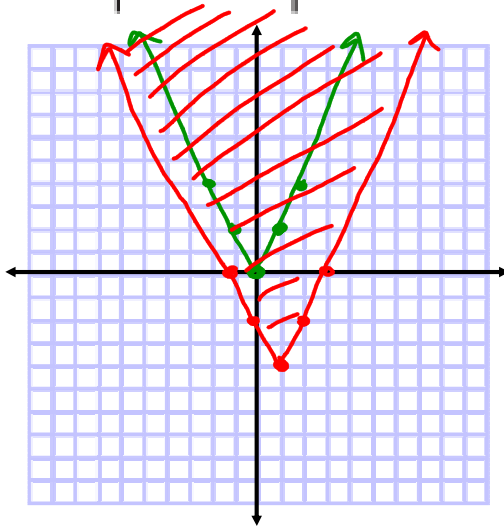
$$(.40)(15) = \$6 \text{ per T-shirt}$$

$$(.30)(10) = \$3 \text{ per cap}$$

$$6x + 3y > 600$$



$$y \geq 2|x - 1| - 4$$



✓ Steeper
1 right
4 down

Parent: $y = 2|x|$

Test (0,0)

$$0 \geq 2|0 - 1| - 4 \quad ?$$

$$0 \geq 2|-1| - 4 \quad ?$$

$$0 \geq 2 - 4$$

$$0 \geq -2 \quad ?$$

Yes