5

A manufacturer produces chairs for a retail store according to the formula, $M = 12P + 100$, where M is the number of units produced and P is the retail price of each chair. The number of units sold by the retail store is given by $N = -3P + 970$, where N is the number of units sold and P is the retail price of each chair. What are all the values of P for which the number of units produced is greater than or equal to the number of units sold?

A) $P \geq 58$

B) $P \leq 58$

C) $P \geq 55$

D) $P \leq 55$

M = produced

P = price

N = sold

$M \geq N$

$12P + 100 \geq -3P + 970$

$+3P \quad +3P$

$15P + 100 \geq 970$

$-100 \quad -100$

$\frac{15P}{15} \geq \frac{870}{15}$

$P \geq 58$

6

If n is an integer and $3(n-2) > -4(n-9)$, what is the least possible value of n?

$3(n-2) > -4(n-9)$

$3n-6 > -4n+36$

$+6 \quad +6$

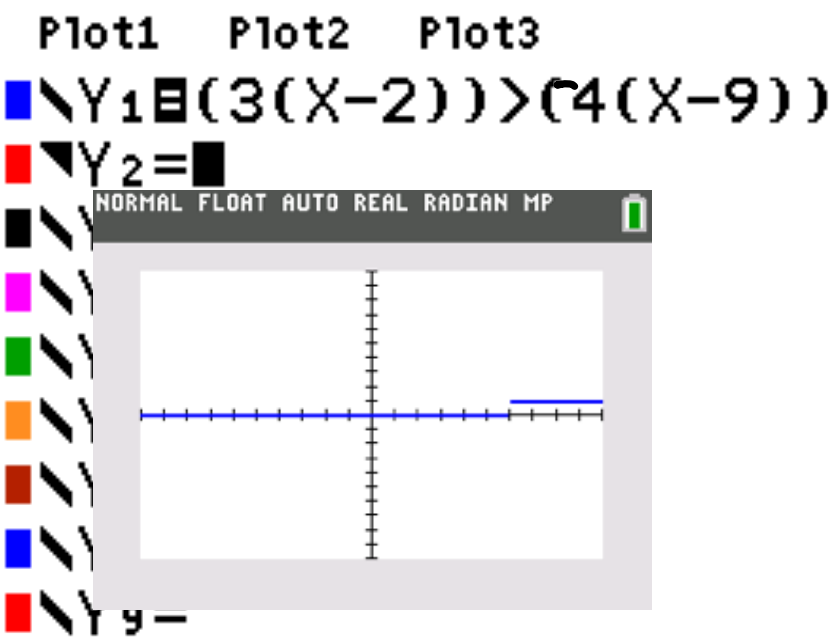
$3n > -4n+42$

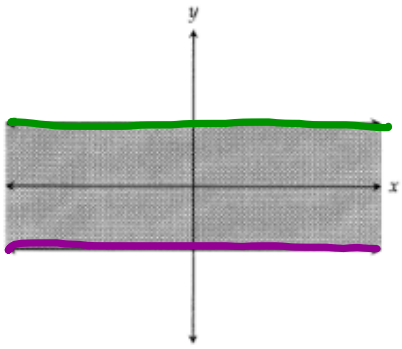
$+4n \quad +4n$

$7n > 42$

$n > 6$

7





$y = 3 \rightarrow y \leq 3$

$y = -3 \rightarrow y \geq -3$

The graph in the xy-plane above could represent which of the following systems of inequalities?

A) $y \geq 3$
$y \leq -3$

B) $y \leq 3$
$y \geq -3$

C) $x \geq 3$
$x \leq -3$

D) $x \leq 3$
$x \geq -3$

8

To get to work, Harry must travel 8 miles by bus and 16 miles by train everyday. The bus travels at an average speed of x miles per hour and the train travels at an average speed of y miles per hour. If Harry's daily commute never takes more than 1 hour, which of the following inequalities represents the possible average speeds of the bus and train during the commute?

A) $\frac{8}{x} + \frac{16}{y} \leq 1$

B) $\frac{16}{x} + \frac{8}{y} \leq 1$

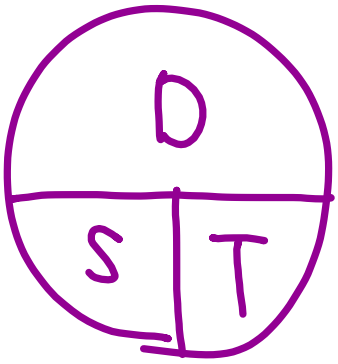
C) $\frac{x}{8} + \frac{y}{16} \leq 1$

D) $8x + 16y \leq 1$

$T = \frac{D}{S}$

D S T

$T_B = \frac{8}{x}$



$T_T = \frac{16}{y}$

$\frac{8}{x} + \frac{16}{y} \leq 1$