

WRITING INEQUALITIES FROM GRAPHS AND WORD PROBLEMS

Slope-Intercept Form:

$$y = mx + b$$

Identify:

m = _____ line: _____
 b = _____ shading: _____

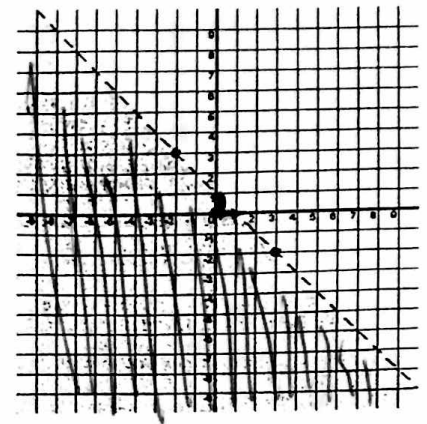
m = -1

b = 1

line: dotted

shading: below

$$y < -x + 1$$

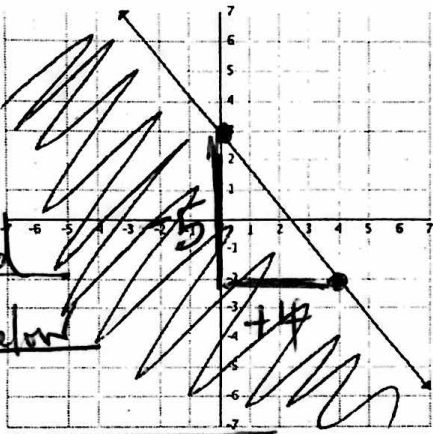


m = -5/4

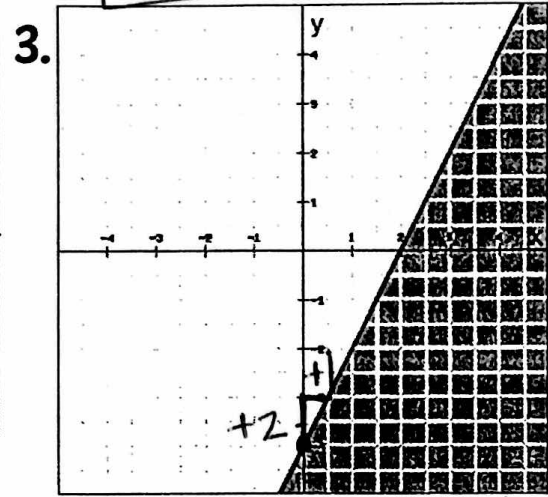
b = 3

line: solid

shade: below

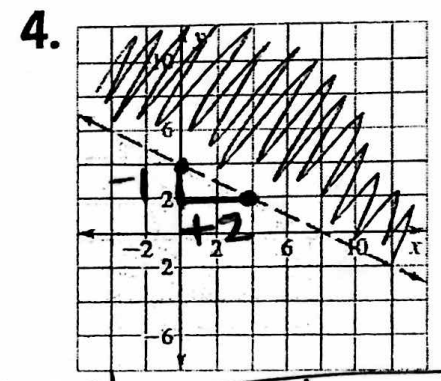


$$y \leq -\frac{5}{4}x + 3$$



m = 2 line: solid
 b = -4 shade: below

$$y \leq 2x - 4$$



m = 1/2 b = 4 $y > \frac{1}{2}x + 4$

line: dotted
 shade: above

WORD PROBLEMS:

1. Breona is going to purchase some writing instruments at the school store, where mechanical pencils cost \$1 and pens cost \$2. She can spend up to \$12, but no more. Write an inequality that represents the situation.

x = pencils

y = pens

$$x + 2y \leq 12$$

$$\leq 12$$

$$\geq 29$$

2. Jonathan is ordering Italian takeout for a big game night with 29 guests in attendance. A family-size lasagna will feed at least 6 guests and an extra-large one will feed at least 12 guests.

x = x-large

y = family size

$$12x + 6y \geq 29$$

3. Sophie is selling handmade toys in an online craft boutique. She hopes to earn at least \$268 by selling toy cars for \$5 each and toy trucks for \$13 each.

x = toy cars

y = toy trucks

$$5x + 13y \geq 268$$

$$\geq 268$$