Please have your homework on your desk. Calculator? Yes!

Date:

TSW graph systems of inequalities.

QRQ1:

1 What is the equation of the line passing through (-6, 15) and (10, 7)?

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7-15}{10-(-6)} = \frac{-8}{16} = \frac{1}{-2}$

$y - y_1 = m(x - x_1)$ PSF

$y - 15 = -\frac{1}{2}(x - (-6))$

$y - 15 = -\frac{1}{2}x - 3$

$+15 \quad +15$

$y = -\frac{1}{2}x + 12$ SI

$y = -\frac{1}{2}x + 12$

$+\frac{1}{2}x \quad +\frac{1}{2}x$

$2\left(\frac{1}{2}x + y\right) = (12)\,2$

$x + 2y = 24$ SF

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2 A delivery service company maintains several vehicles. The table summarizes the cost for auto insurance related to the number of vehicles insured. Using the equation of a line of best fit for the data, which is the closest estimate of the total cost of insuring fifteen vehicles?

Number of Vehicles (X)	Cost ($) (Y)
1	1,700
2	2,200
3	2,700
4	3,200
5	3,700
6	4,200

A $7,240
B $7,800
C $8,700
D $8,972

NORMAL FLOAT AUTO REAL RADIAN MP

LinReg
y=ax+b
a=500
b=1200

$y = 500x + 1200$
$y = 500(15) + 1200$
$y = 8700$

Stat 1 $x_5 = L_4$ $y_5 = L_2$ Stat → Calc 4 enter enter enter enter enter

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3 What is the equation of a line with a slope of $-\frac{1}{2}$ and the point (-6, -5)?

~~A $y = \frac{1}{2}x + 8$~~
~~B $y = \frac{1}{2}x - 5$~~
C $y = -\frac{1}{2}x - 8$
D $y = -\frac{1}{2}x - 6$

m x_1, y_1

$y - y_1 = m(x - x_1)$

$y + 5 = -\frac{1}{2}(x + 6)$

$y + 5 = -\frac{1}{2}x - 3$

$-5 \quad -5$

$y = -\frac{1}{2}x - 8$

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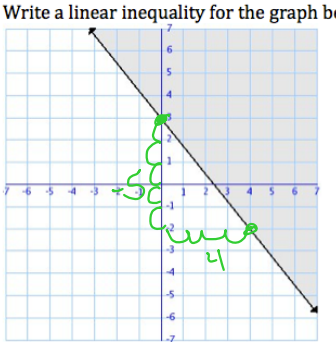
4 Write a linear inequality for the graph below.

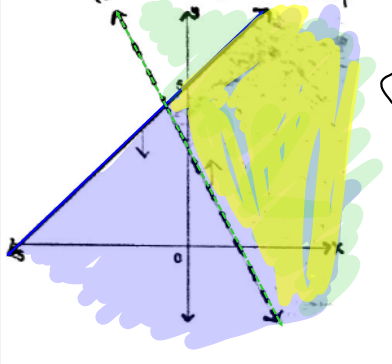


Solid
Shaded
above
b = (0, 3)
$m = -\frac{5}{4}$

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

After Test 4 Handout

1) $\begin{cases} y \leq x + 5 & \text{Shade down, solid} \\ y > -2x + 3 & \text{Shade up, dotted} \end{cases}$



← solution set

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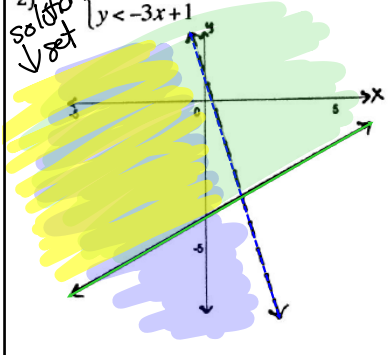
2) solution set $\begin{cases} y \geq \frac{1}{2}x - 4 \\ y < -3x + 1 \end{cases}$

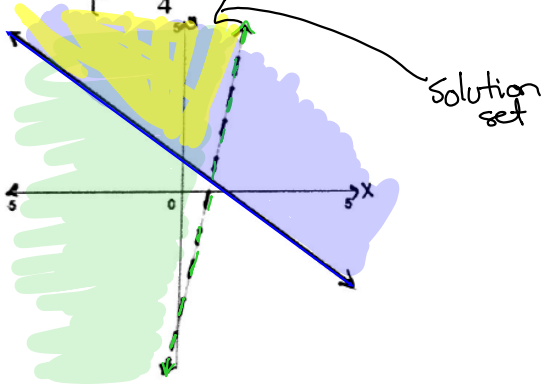


3

$$\begin{cases} y > 5x - 4 \\ y \geq -\frac{3}{4}x + 1 \end{cases}$$

Shade above dotted

solid line shade above

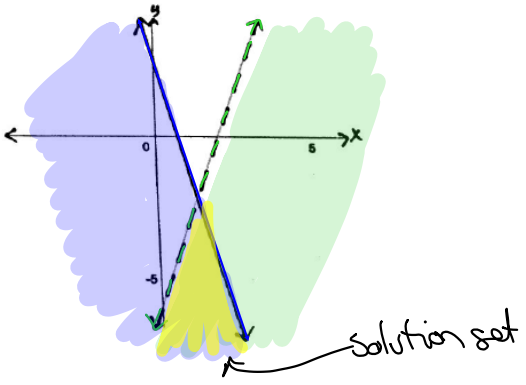


4.)

$$\begin{cases} y < 3x - 6 \\ y \leq -4x + 3 \end{cases}$$

dotted shade below

Solid Shade below



Using #1-4 above, identify if the following points are solutions to the SYSTEM of inequalities. If the point is in the shaded region, it is a solution to the system.

5.) (-4, 3)

#1 NO
#2 Yes
#3 NO
#4 NO

6.) (4, 2)

#1 Yes
#2 No
#3 NO
#4 NO

7.) (4, -1)

#1 NO
#2 NO
#3 NO
#4 No

8.) (-2, -2)

#1 No
#2 YES
#3 NO
#4 No