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*October 13, 2011*

*NO Warm-Up*

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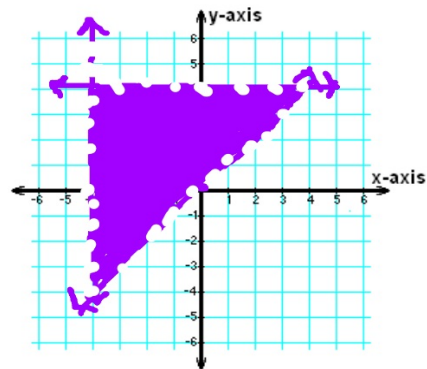
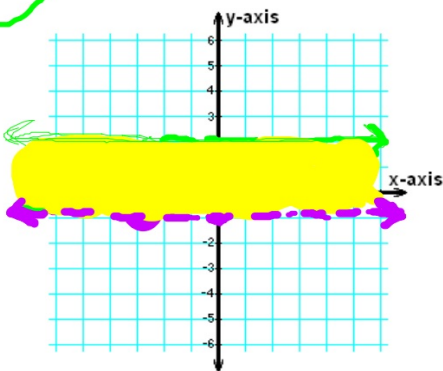
Get out your homework... questions!

14)  $y > -1$   
 $y \leq 2$

16)

$$\begin{aligned} y &< 4 \\ x &> -4 \\ y &> x \end{aligned}$$

ii



## **10/13 - Solving Linear Systems in 3 Variables**

*What would it look like??  
intersecting planes*

Solve this system:

$(5, 1, -2)$

$$\begin{cases} \text{A} & x - 3y + 3z = -4 \\ \text{B} & 2x + 3y - z = 15 \\ \text{C} & 4x - 3y - z = 19 \end{cases}$$

A  $x - 3y + 3z = -4$

B  $2x + 3y - z = 15$

B +  $2x + 3y - z = 15$

C +  $4x - 3y - z = 19$

D  $3x + 2z = 11$

E  $6x - 2z = 34$

E +  $6x - 2z = 34$

$6(5) - 2z = 34$

$30 - 2z = 34$

$-2z = 4$

$\frac{9x}{9} = \frac{45}{9}$   
 $x = 5$

A  $(5) - 3y + 3(-2) = -4$

$5 - 3y - 6 = -4$

$-3y - 1 = -4$

$-3y = -3$

$y = 1$

$z = -2$

Solve this system:

$$\begin{array}{l}
 \text{A} \begin{cases} 3x + 2y + 4z = 11 \\ 2x - y + 3z = 4 \\ 5x - 3y + 5z = -1 \end{cases} \\
 \text{B} \\
 \text{C}
 \end{array}
 \quad
 \begin{array}{l}
 \text{A } 3x + 2y + 4z = 11 \\
 \text{2B } 4x - 7y + 6z = 8 \\
 \text{D } 7x + 10z = 19 \\
 \text{E } -7x - 28z = -91 \\
 \hline
 -18z = -72 \\
 \frac{-18}{-18} = \frac{-72}{-18} \\
 z = 4
 \end{array}
 \quad
 \begin{array}{l}
 -3\text{B } -6x + 3y - 9z = -12 \\
 \text{C } 5x - 7y + 5z = -1 \\
 \hline
 \text{E } -x - 4z = -13 \\
 -x - 4(4) = -13 \\
 -x - 16 = -13 \\
 \quad +16 \quad +16 \\
 -x = 3 \\
 x = -3
 \end{array}$$

① Choose 2 eq. and eliminate one variable

② Choose 2 diff equations and eliminate the same variable

③ Solve the resulting system of 2 variables.

2 var. w/ answers

④ Sub. into an original equation

⑤ What's the point?

$$\begin{array}{l}
 \rightarrow \text{B } 2x - y + 3z = 4 \\
 2(-3) - y + 3(4) = 4 \\
 -6 - y + 12 = 4 \\
 -y + 6 = 4 \\
 -y = -2 \\
 y = 2
 \end{array}$$

$(-3, 2, 4)$

Solve this system:

$$\begin{cases} x + 2y + 3z = 9 \\ 2x - y + z = 8 \\ 3x - z = 3 \end{cases}$$

Homework:

page 162 #21-28 all

Due