Review for H. Alg 2 Quest on Monday

Key

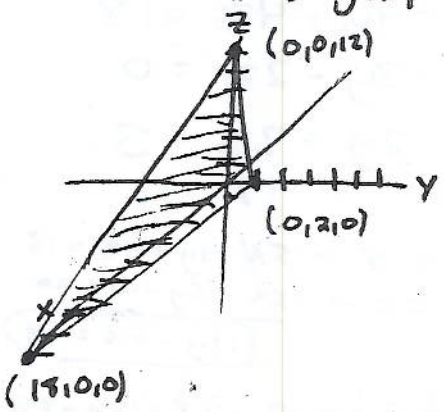
① Find the x int, y int. and z int. and graph equation of plane

$2x + 18y + 3z = 36$

$(0, 0, 12)$

$(18, 0, 0)$

$(0, 2, 0)$



② Write the linear equation as a function of x and y

$x + 6y + z = 10$ $\quad z = -x - 6y + 10$

$f(x,y) = -x - 6y + 10$

③ Evaluate $f(-4,-1)$ to above equation

$f(-4,-1) = -(-4) - 6(-1) + 10$

$= 4 + 6 + 10$

$f(-4,-1) = 20$

④ Is $(2,-1,1)$ a solution to the system?

$x + 2y - 3z = -3$ $\quad 2 + 2(-1) - 3(1) \stackrel{?}{=} -3$ ✓

$2x - 5y + 4z = 13$ $\quad 2(2) - 5(-1) + 4(1) \stackrel{?}{=} 13$ ✓ Yes

$5x + 4y - z = 5$ $\quad 5(2) + 4(-1) - 1 \stackrel{?}{=} 5$ ✓

⑤ Solve the system

$2x - 3y + z = 10$

$y + 2z = 13$

$z = 5$

$y + 2(5) = 13$

$y + 10 = 13$

$y = 3$

$2(x) - 3(3) + 5 = 10$

$2x - 4 = 10$

$2x = 14$

$x = 7$

$(7, 3, 5)$

(check it)

⑥ Solve the System

① $5x - 4y + 4z = 18$
② $-x + 3y - 2z = 0$
③ $4x - 2y + 7z = 3$

$5x - 4(0) + 4(-3) = 18$
$5x - 12 = 18$
$5x = 30$
$x = 6$

$(6, 0, -3)$ check it.

① $5x - 4y + 4z = 18 \rightarrow 5x - 4y + 4z = 18$
② (5) $-x + 3y - 2z = 0 \rightarrow -5x + 15y - 10z = 0$
$11y - 6z = 18$

$11y - 6z = 18$
$-60y + 6z = -18$
$-49y = 0$ $y = 0$

③ (4) $-x + 3y - 2z = 0 \rightarrow -4x + 12y - 8z = 0$
③ $4x - 2y + 7z = 3 \rightarrow 4x - 2y + 7z = 3$
(6) $10y - z = 3$

$10(0) - z = 3$
$z = -3$

⑦ Solve the System

(-2) (-1) $x + y - 2z = 5 \rightarrow -x - y + 2z = -5$
$x + 2y + z = 8 \rightarrow x + 2y + z = 8$
$2x + 3y - z = 1$
(-1) $y + 3z = 3$

$-2x - 2y + 4z = -10$
$2x + 3y - z = 1$
$y + 3z = -9$

$-y - 3z = -3$
$y + 3z = -9$
$0 = -12 \rightarrow$ NO SOLUTIONS

⑧ Solve the System

$z = 2 - x - y$
$z = 2 - x - (-x + z)$
$x + y + z = 2$
$x + y - z = 2$
$2x + 2y + z = 4$

$z = 0$
$x = -x + 2y$

(-3) $2x + 2y = 4 \rightarrow -6x - 6y = -12$
$6x + 6y = 12$
$0 = 0$ infinite

(2) $3x + 3y = 6 \rightarrow$
$3y = -3x + 6$
$y = -x + 2$

$(x, -x + 2, 0)$
(write answer like this)

Then Do #21 & 22 on WORD problem WS IN PACKET.

(21) let B = Blouse
let K = Skirt
let J = Jeans

$3b + 2k + 4j = 292$
$4b + k + 3j = 252$
$-k + j = 4$

$B = \$28$ $K = \$32$ $J = \$36$

(22) let L = length long side
let m = " of middle
let h = " of short

$L + m + h = 83$
$L - 3h = 0$

$L = 39$ in
$m = 31$ in
$h = 13$ in