

Math 2270-1

Wed 24 Aug.

Welcome back!

Read along example in page 1 of text!

$x$  = yield of 1 bundle ~~great~~ inferior rice

$y$  = yield/bundle medium grade

$z$  = " " superior



$$1 \cdot x + 2y + 3z = 39$$

$$x + 3y + 2z = 34$$

$$3x + 2y + z = 26$$

elementary equation operations:

- mult eqn by const
- interchange eqns
- add multiple of one eqn to another

HW due Fri 9/2

1.1 1, 3, (6, 11, 13, 14), 17, 19, (21, 24, 27) 28, (29)

1.2 1, (5, 10, 16, 17, 18), 20, 21, (24, 25, 29, 30)

32, (34, 35, 37), 38, (39, 41)

1.3 (1, 5, 6) 7, (9) 11, 13, (14) 17, (18, 20, 22, 24)

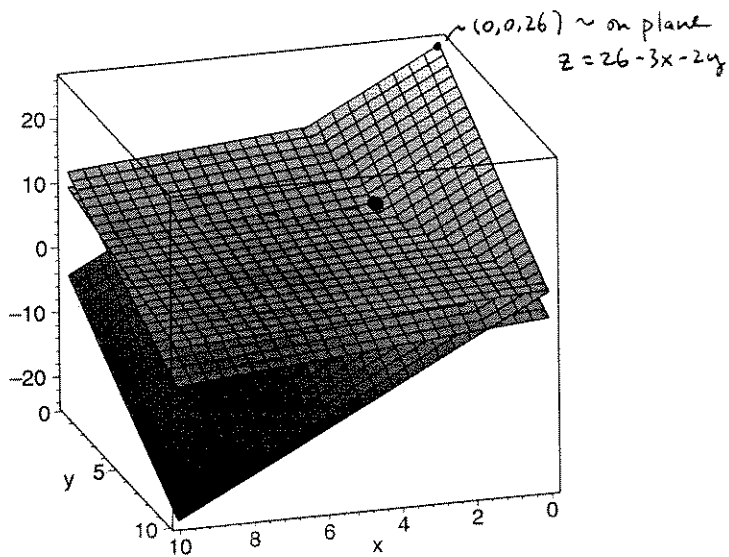
27, (30) 31, (32, 33, 34) 35, (55)

Linear algebra  $\leftrightarrow$  linear geometry:

solution set of each eqn on page 1 is a plane in  $\mathbb{R}^3$   
 seeking  $(x, y, z)$  which satisfy all eqns is seeking  
 points of intersection for all the planes!

MAPLE!

```
> with(plots):
> plot3d([(39-x-2*y)/3, (34-x-3*y)/2, 26-3*x-2*y],
x=0..10, y=0..10, axes=boxed);
```



What other pictures are possible for 3 eqns, 3 unknowns?  
 2 unknowns, different #'s of eqns?