(Preview: ① $-|2x+7| - 5 = -5$

② // and ⊥ to lie

$9x + 2y = -9$ // and ⊥ lines through $(-1, -4)$

m_0: examine $Ax + By = C$

$By = -Ax + C$

$y = \frac{-A}{B} x + \frac{C}{B}$

So $m_0 = \frac{-A}{B}$

Here, $m_0 = -\frac{9}{2}$

//-line $(m_{//} = m_0)$: $y + 4 = -\frac{9}{2}(x + 1)$

⊥-line $(m_\perp = \frac{-1}{m_0})$: $m_\perp = -1/(-\frac{9}{2}) = \frac{2}{9}$

$y + 4 = \frac{2}{9}(x + 1)$

③ pt slope

line through $(-4, -8)$ w/ slope $\frac{5}{4}$

as is,   nos

$\boxed{y + 8 = \frac{5}{4}(x + 4)}$

negate

④ one $L_1: 3x + 2y = 6$ 83 %.

and $L_2: 2x - 3y = 7$

//, ⊥ or askew ?,

Recall $m = \frac{-A}{B}$ for when $Ax + By = C$

$m_{L_1} = \frac{-3}{2}$

$m_{L_2} = -\frac{2}{-3} = \frac{2}{3}$

Note $m_{L_1} \neq m_{L_2}$ — not //

$m_{L_1} \cdot m_{L_2} = -\frac{3}{2} \cdot \frac{2}{3} = -1$

hence ⊥.

⑤ Find x, y intercepts for

$y^2 - x - 4 = 0$

Def: x-intercepts are points on curve   intersecting

$y = 0$. Ie 2nd coord is 0.

— y-int is when 1st coord is 0.
     (x)

for ex: x-ints: set $y = 0$

$0^2 - x - 4 = 0$

$x = -4$

So is point $(-4, 0)$ — Deviation from
                              Aleks, thre, just -4.

y-int : set $x = 0$

$y^2 - 0 - 4 = 0$

$y^2 = 4$ 1^2 kills sign, to undo

$y = \pm 2$ need √n

y-ints. $(0, -2), (0, 2)$

Aleks: -2, 2

⑥ eqn of line through   2 pts   80 % vers

Line   through $(-\frac{2}{5}, \frac{8}{3})$ and $(\frac{1}{3}, \frac{6}{5})$

$m = \frac{\Delta y}{\Delta x} = \frac{\frac{8}{3} - \frac{6}{5}}{-\frac{2}{5} - \frac{1}{3}} = \frac{3 \cdot 5}{3 \cdot 5} \cdot \frac{(\frac{8}{3} - \frac{6}{5})}{(-\frac{2}{5} - \frac{1}{3})} = \frac{8 \cdot 5 - 6 \cdot 3}{-2 \cdot 3 - 5}$

$= \frac{40 - 18}{-6 - 5} = \frac{22}{-11} = -2$

Line: $y - \frac{6}{5} = -2(x - \frac{1}{3})$

Content: 2.1a and   2.1b   quickish

2.2 Intercepts
L2.d2b

1. goto 2.1b — lines, work #4
   L2.d12   #5

2. goto 2.2 — intercepts x, attendees, race to hold up ans.
   Groups of 4, half does — eqn of plane
   at end do $x + 2y + 3z = 4$
   find x, y, z-intercepts.

   Recall: intercepts are when it hits the axes,
   ie when all other vars are zero.

   x-int: $x + 0 + 0 = 4$
           $(4, 0, 0)$
   y-int: $0 + 2y + 0 = 4$
           $(0, 2, 0)$
   z-int: $0 + 0 + 3z = 4$
           $(0, 0, 4/3)$

If finish, Aleks time

Ann. test 1
- 20 Q's
- 75 min
  - expected 20min.
- modules 1 + 2
- Review for exam 1 highly recomended.
  - all possible material.

review:

1) a) Line through $(7, -2)$ with slope $4/3$ in standard form.

b) $\perp$ line to (a) through origin.

2) find x, y-ints for
$$x^2 - y^2 = 4$$

3) a) a vertical line passes through $(7, 12)$. eqn?

b) perpendicular to (a) through (a, b)?

4) Am stands high above a pool, jumps in, slowly sim's to the bottom the quickly assends to surface.
Graph hieght above w.r.t. time.

5) Kirby opened an in investment account and placed 5000 inside. at the end of the year, the account decreased by 5%.
multiplier:
End amount:

6) $16u + 3) = -9$

7) Rewrite w/ no negatives
$$\frac{7x^{-2} (y^3 z^{-4})^{-2}}{y \cdot 49^{-2} z^{-3}}$$

8) The sum of a quantity and 7 becomes that quantity and 7 multiplied.

— — — — — — — —

- Review for test one on laptops.