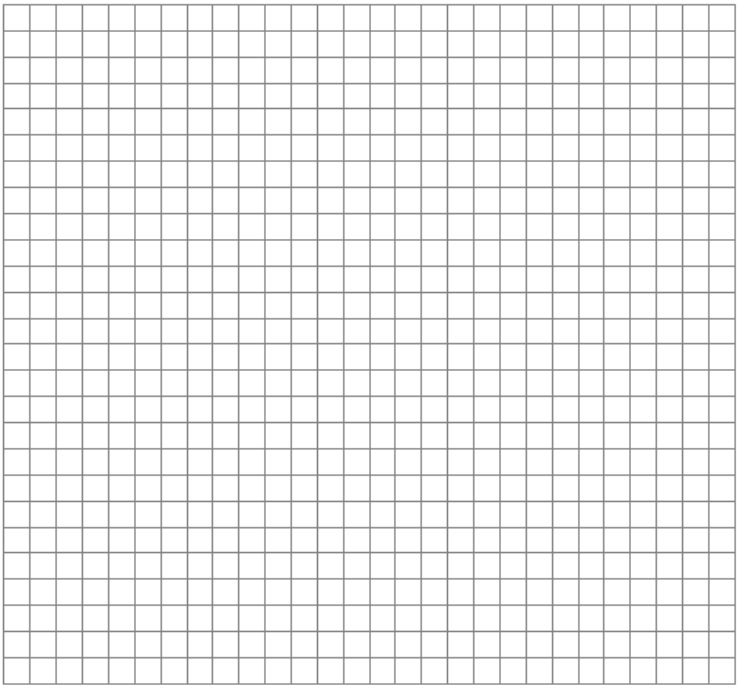
Concept Sheet on _____ Section_____

Formula(s):

Complete an example→

Describe the procedures & steps in detail:



Additional Info:

Concept Sheet on Writing Equations of Lines Section 2.2

Formula(s):

Slope $= m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

Point-Slope: $y - y_1 = m(x - x_1)$ (m = slope, (x_1, y_1) any point on line)

$Ax + By = C$ General Form

Slope-intercept: $y = mx + b$ (m = slope, b = y-int.)

Parallel ⇒ same slope // Perpendicular ⇒ Neg. Recip. Slope

Complete an example →

WRITE AN EQUATION OF A LINE PARALLEL TO $4x - 5y = 3$ AND THROUGH $(9, -6)$

List the procedures & steps:

1. Be sure to have a pt and slope before Writing Eq. of line
2. I didnt have slope, so use parallel equation, rearrange it and get its Slope. Parallel ⇒ same slope
3. Now that I have point a slope, use $y - y_1 = m(x - x_1)$
4. Sub in point and slope. Note $y - (-6)$ was written $y + 6$
5. Distribute $4/5$ into $(x - 9)$
6. Subtract 6 over ... rewrite as a fraction with denomin. of 5 so its easier to add to $-36/5$.
7. This form is fine for Birgit's quizzes or tests. MathXL wants it in General Form
8. Multiply be denom. to clear fraction and rearrange in

1. Point: $(9, -6)$ Slope $= m =$ ____

2. $4x - 5y = 3$
   $\frac{-5y}{-5} = \frac{-4x}{-5} + \frac{3}{-5}$
   $y = \frac{4}{5}x - \frac{3}{5}$ → Slope $= 4/5$

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

4. $y + 6 = \frac{4}{5}(x - 9)$

5. $y + 6 = \frac{4}{5}x - \frac{4}{5}\left(\frac{9}{1}\right)$

6. $y + 6 = \frac{4}{5}x - \frac{36}{5}$
   $-6 \qquad -6$

7. $y = \frac{4}{5}x - \frac{96}{5}$

8. $5(y) = 5\left(\frac{4}{5}x\right) - \left(\frac{96}{5}\right)5$
   $5y = 4x - 96$
   $-4x \quad -4x$
   $-4x + 5y = -96$ Mult. (-1)
   $4x - 5y = 96$

$\frac{-36}{5} - \frac{30}{5} = \frac{-96}{5}$

Additional Info: $Ax + By = C$

If I was given a question asking for "perpendicular to $4x - 5y = 3$", then if slope $= 4/5$, my perpendicular slope $= -5/4$