

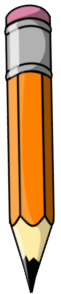
Agenda:

1. Topic 2-4 (part 3)
2. quiz corrections



Today you will need:

- > a calculator
- > pencil



Housekeeping:

1. Topic 2 test- this Friday
2. Topic 1 retake deadline: 10-6 (Friday)



Assignments this unit:

- > MathXL 2-1 (past due)
- > "Pairs of angles review" (turn into hour tray)
- > WS 2-2 (turn into hour tray)

Take out your notes from yesterday....

flip to this page...

Writing Equations of Lines

Write the equation for a line parallel/perpendicular to the line provided through the given point.

- 1) through: $(1, -1)$, parallel to $y = -4x + 0$ ← old slope: $-\frac{4}{1}$
 (x, y) 1. new // slope: $-\frac{4}{1}$ y-int



Steps:

1. Find the new slope (m)
2. Substitute (x, y) and m into $y = mx + b$
3. Solve for b
4. Write the answer in slope-intercept form

Step 2. $x = 1$ $y = -1$ $m = -4$
 $y = mx + b$

Step 3. $(-1) = -4(1) + b$
 $-1 = -4 + b$
 $+4 \quad +4$
 $3 = b$

Step 4. $y = mx + b$

$y = -4x + 3$

2) through: (4, 2), parallel to $y = -\frac{1}{4}x + 1$ ← old slope

Step 1: new slope: $-\frac{1}{4}$

Step 2: $x=4$ $y=2$ $m = -\frac{1}{4}$

$$y = mx + b$$
$$2 = \left(-\frac{1}{4}\right)(4) + b$$
$$2 = -1 + b$$

Step 3

$$b = 3$$

Step 4

$$y = mx + b$$
$$y = -\frac{1}{4}x + 3$$

3) through: $(0, 5)$, perp. to $y = -\frac{1}{3}x - 2$

Step 1: old slope: $-\frac{1}{3}$ $\rightarrow +\frac{3}{1}$
new slope: $\frac{3}{1}$ or 3

⌊ Slopes are opposite reciprocals

Step 2: new slope (m) = 3 $\begin{matrix} x=0 \\ y=5 \end{matrix}$

$$y = mx + b$$
$$5 = 3(0) + b$$
$$5 = 0 + b$$
$$b = 5$$

Steps:

1. Find the new slope (m)
2. Substitute (x, y) and m into $y = mx + b$
3. Solve for b
4. Write the answer in slope-intercept form

Step 4: $y = mx + b$

$$y = 3x + 5$$

Steps:

- Find the new slope (m)
- Substitute (x,y) and m into $y = mx + b$
- Solve for b
- Write the answer in slope-intercept form

4) through: $(4, 4)$, perp. to $y = -\frac{2}{7}x - 4$

$$y = \frac{7}{2}x - 10$$

*try it again +

ask ?s if you got something else

5) through: $(-1, -4)$, perp. to $y = x - 4$

$$y = -1x - 5$$

$$x = -1 \quad y = -4 \quad m = -1$$

$$\begin{array}{r} -4 = -1(-1) + b \\ -4 = 1 + b \\ -5 = b \end{array}$$

$$y = -1x - 5$$

2. **Error Analysis** Katrina said that the lines $y = -\frac{2}{3}x + 5$ and $y = -\frac{3}{2}x + 2$ are perpendicular. Explain Katrina's error.

there was no sign change
OR
both slopes were negative
⊥ lines are
opposite reciprocals
slopes

3. **Error Analysis** Devin said that $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ for $A(-2, 0)$, $B(2, 3)$, $C(1, -1)$, and $D(5, -4)$ are parallel. Explain and correct Devin's error.

$$\text{slope of } \overleftrightarrow{AB}: \frac{3 - 0}{2 - (-2)} = \frac{3}{4}$$

$$\text{slope of } \overleftrightarrow{CD}: \frac{-1 - (-4)}{5 - 1} = \frac{3}{4}$$

slopes are equal, so $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ **X**

$$\frac{y_2 - y_1}{x_2 - x_1} = m$$



Shhhhh...



Practice time

Please use the rest of
classtime to complete
your assignment



**NO CELL
PHONES**

Work on Worksheet:
"2-4 Writing Equations of Lines"