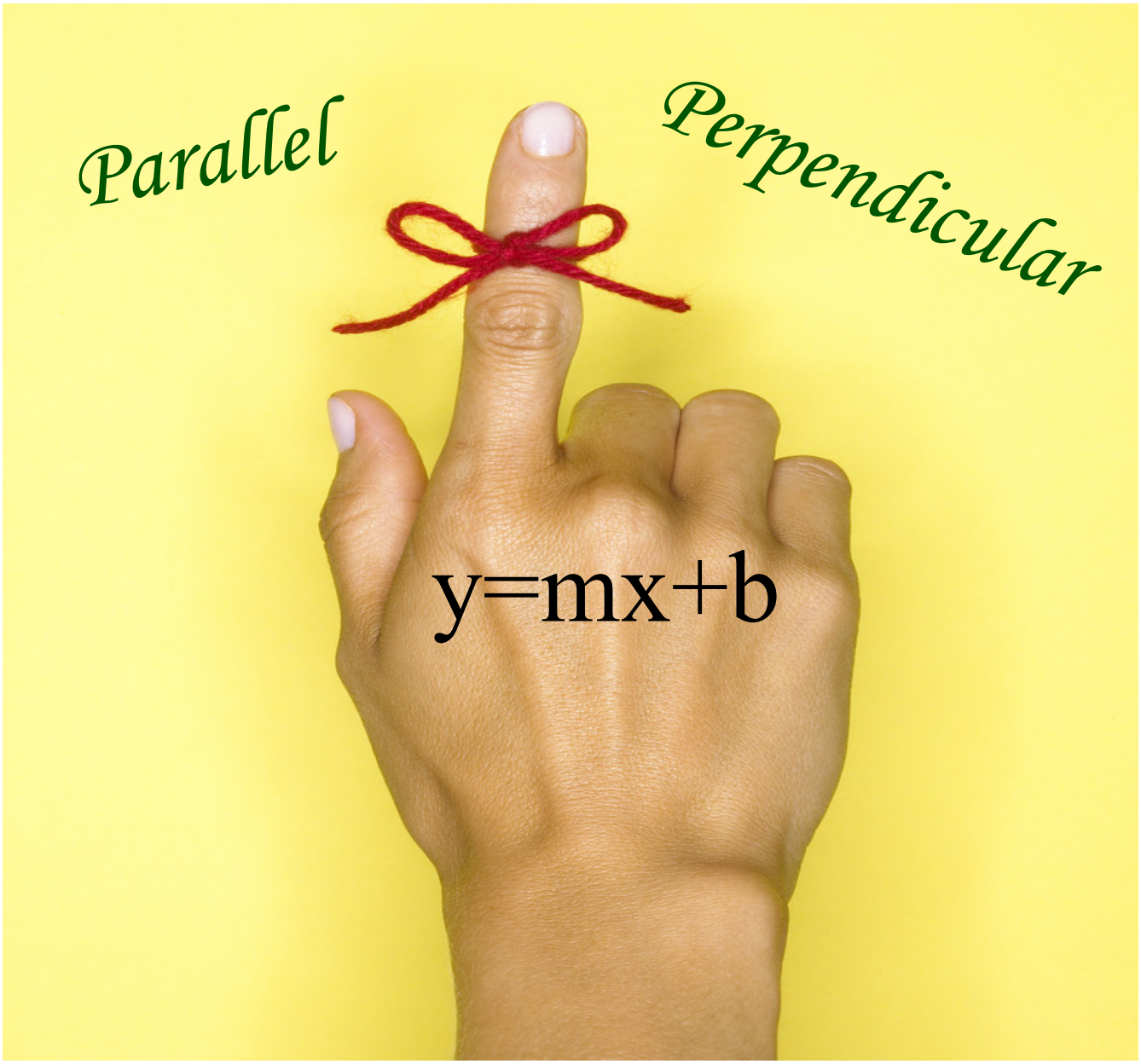
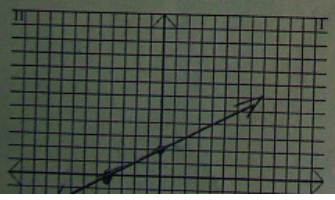

Parallel
Perpendicular
y=mx+b

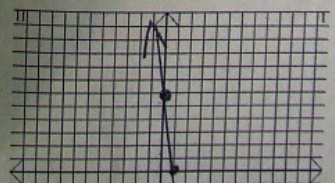
Review for Test

slope, parallel, perpendicular, y=mx+b, finding "k", intercepts

$P_1(x_1, y_1)$ $P_2(x_2, y_2)$

1. Find the slope of the line passing through (5, -7)) and (-2, -7).
2. A line passes through (6, -1) and (11 , k). Find k if the slope is parallel to the x-axis.
3. State the slope perpendicular to $3(y + 7) = 5x - 6$.
4. A line passes through (k, -4) and (-9, 8). Find the value of k if the slope is parallel to y=
5. A line passes through (6, 7) and (5k, 9) . Find k if the slope of the line is perpendicular
6. Calculate the slope of the line represented by $10(x+4) = 5(5y-2)$.
7. A line passes through (2k, 0) and (2k, 6). Find k if the slope of the line is parallel to -3/
8. What is the slope of a line with an x-intercept of 7 and a y-intercept of -9.
9. A line passes through points (3, 5k) and (-8k, 6). Find k if the slope of the line is perpendicular to y=6/3x+11.
10. State the slope perpendicular to $12x + 4y = 16$.
11. State the slope(m), the y-intercept, and write the equation.

a) 

b) 

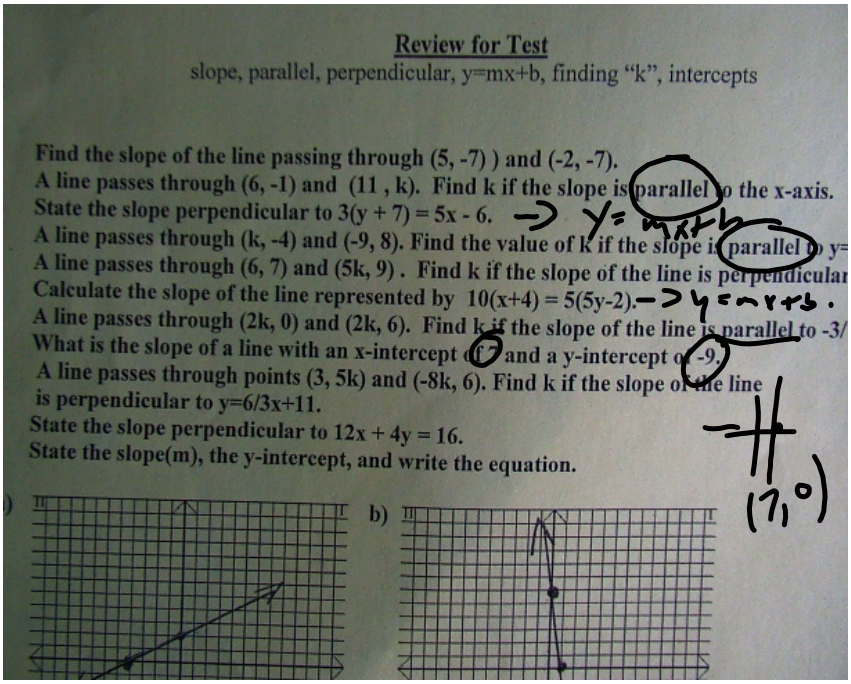
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{-7 - (-7)}{-2 - 5}$$

$$m = \frac{-7 + 7}{-7}$$

$$m = \frac{0}{-7}$$

$$m = 0$$



Review for Test

slope, parallel, perpendicular, y=mx+b, finding "k", intercepts

Find the slope of the line passing through (5, -7)) and (-2, -7).
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Calculate the slope of the line represented by 10(x+4) = 5(5y-2).
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A line passes through points (3, 5k) and (-8k, 6). Find k if the slope of the line is perpendicular to y=6/3x+11.
State the slope perpendicular to 12x + 4y = 16.
State the slope(m), the y-intercept, and write the equation.

b)

5) Slope = $\pm\frac{5}{6}$

$= -\frac{6}{5}$

m $x_1\ y_1$ $x_2\ y_2$

P1 (6, 7) P2 (5k, 9)

(4)

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

$-\frac{6}{5} = \frac{9-7}{5k-6}$

$-6(5k-6) = 5(9-7)$

$-30k + 36 = 5(2)$

$-30k + 36 = 10$

$-30k = 10 - 36$

$\frac{-30k}{-30} = \frac{-26}{-30}$

$k = \frac{-13}{15}$

(2)(3)

(5)(k)

$5 \times \frac{-13}{15} = \frac{-65}{15}$

(4)

Review for Test

slope, parallel, perpendicular, y=mx+b, finding "k", intercepts

1. Find the slope of the line passing through (5, -7)) and (-2, -7).
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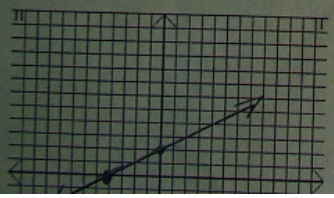
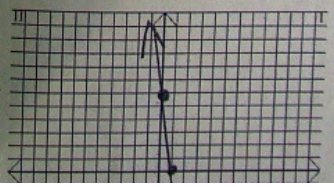
a) 

b) 

(6) $y = mx + b$

$10(x+4) = 5(5y-2)$

$10x + 40 = 25y - 10$

$-25y = -10x - 40 - 10$

$\frac{-25y}{-25} = \frac{-10x - 50}{-25}$

$y = +\frac{2}{5}x + 2$

$m = \frac{2}{5}$.


Reminder !!!
Whenever you see the words Parallel & Perpendicular think
Slope


y-intercept
x=0
Reminder!
x-intercept
y=0

Warm Up Questions

#1 Find the equation of a line parallel to $3y=4x-1$ and passing through the point $(4,2)$.

#2 Determine the equation of a line perpendicular to $4x+5y=7$ and having an x-intercept of -2.

#3 Determine the equation of a horizontal line with a y-intercept of -3

Find the equation of a line parallel to 3y=4x-1 and passing through the point (4,2).

Step #1

Parallel - (Same Slope)

$y = mx + b$

$3y = 4x - 1$

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

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

$m = \frac{4}{3}$

Step #2

Write Equation in General Form

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

$y - 2 = 4/3(x - 4)$

$3y - 6 = 4(x - 4)$

$3y - 6 = 4x - 16$

$-4x + 3y - 6 + 16 = 0$

$-4x + 3y + 10 = 0$

$+4x - 3y - 10 = 0$

$Ax + By + C = 0$

x_1 y_1

$y - 2 = 4/3(x - 4)$

$\times 3 \quad \times 3 \quad \times 3$

$3y - 6 = 4(x - 4)$

$3y - 6 = 12$

Determine the equation of a line perpendicular to 4x+5y=7 and having an x-intercept of -2.

① Change sign
② Flip.

(-2, 0)

ax+by+c

y = mx+b

Step #1

Opposite Reciprocal Slope

4x + 5y = 7

5y = -4x + 7

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

m = 5/4

Step #2

Point x-int (y = 0)

(-2, 0)

Step #3

Write Equation in General Form

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

y - 0 = 5/4(x - -2)

y - 0 = 5/4(x + 2)

4y = 5 (x + 2)

4y = 5x + 10

-5x + 4y - 10 = 0

5x - 4y +10 = 0

Determine the equation of a horizontal line with a y-intercept of -3

$m = 0$

$y - y = m(x - x_1)$

Step #1

Horizontal Line

$m = 0$

Step #2

Point y-int = -3

$(0, -3)$

Step #3

Write Equation in General Form

$y = mx + b$
$y = 0x - 3$
$y = -3$
$y + 3 = 0$

M(3, 5) U(-2, -1) D(0, -4)

Find the equation of a line parallel to MD and passing through U.

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

(2) Points

$(-2, -1)$

$x_1 \quad y_1$

Parallel = Slope (1) $m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{-4 - 5}{0 - 3}$

$m = \frac{-9}{-3}$

$m = 3$

(3)

$y - (-1) = 3(x - (-2))$

$y + 1 = 3x + 6$

$-3x + y + 1 - 6 = 0$

$-3x + y - 5 = 0$

$+3x - y + 5 = 0$

Homework for Tuesday Dec 16.

1, 2, 3ab, 4ab,