Test

① Finding Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$ or $m = \frac{\text{rise}}{\text{run}}$

② Parallel: (Same Slope) → $m = \frac{1}{2}$ $m_{\parallel} = \frac{1}{2}$

Perpendicular: (Opposite Reciprocals) → $m = \frac{1}{2}$ $m_{\perp} = -\frac{2}{1}$

③ Finding k

④ $y = \underline{m}x + \underline{b}$ m = Slope b = y-intercept

⑤ Graphing: ① Plot the y-intercept (b)

② Use your slope ($m = \frac{\text{rise}}{\text{run}}$) to plot other points

③ Join the points with a straight line.

⑥ Word Problems:

b = base rate, flat rate, fixed fee etc.

m = per hour, per km, per photo etc

$y = mx + b$

Review Slope

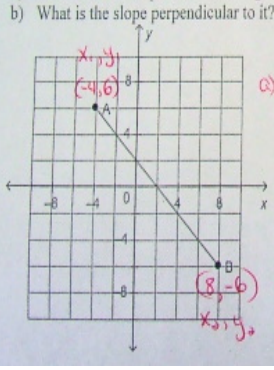
1. Write an equation (**slope intercept form**) for the graph of a linear function that has slope 8 and and a y-intercept of 7.

$y = 8x + 7$

2. Write the equation(**slope intercept form**) of a line with a y-intercept of -4 and a slope of 4/3.

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

3. a) Determine the slope of this line segment.
   b) What is the slope perpendicular to it?



a) $m = \frac{-6-6}{8-(-4)} = \frac{-12}{12} = -1$

b) perpendicular slope $= \frac{1}{1} = 1$

4. Determine the slope of the line that passes through (–11, –8) and (6, 16).

x_1, y_1 x_2, y_2

$m = \frac{16-(-8)}{6-(-11)} = \frac{24}{17}$

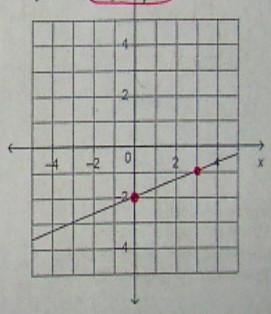
5. The slopes of two lines are $\frac{6}{11}$ and $\frac{6}{11}$. Are the two lines parallel, perpendicular, or neither?

6. The slopes of two lines are –2 and $\frac{1}{2}$. Are the two lines parallel, perpendicular, or neither?

7. *Slope:* $m = \frac{1}{3}$

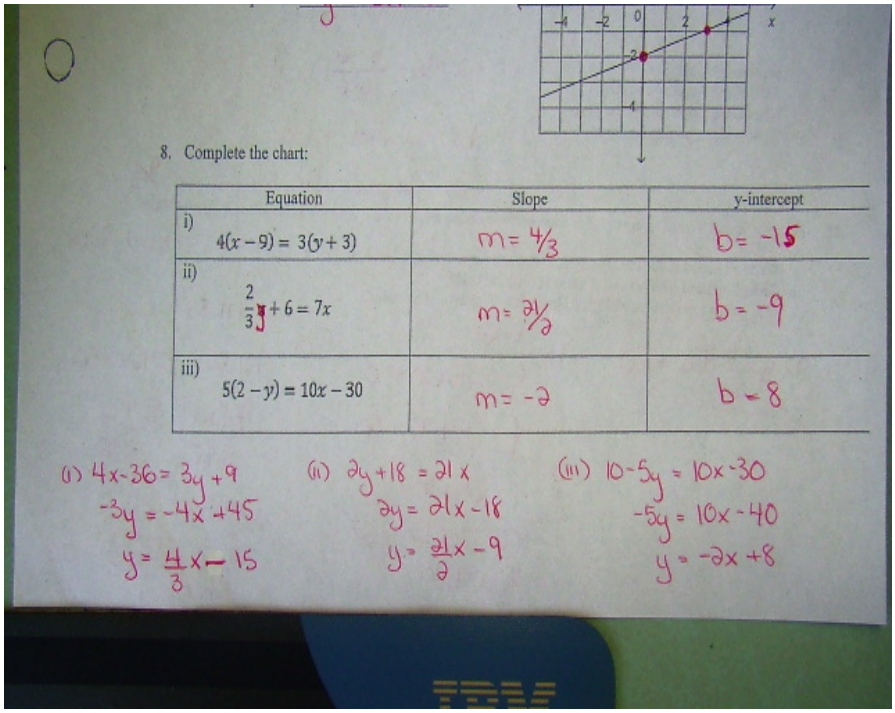
Point: y-intercept = -2 = b

Equation $y = \frac{1}{3}x - 2$



8. Complete the chart:

Equation	Slope	y-intercept
i) $4(x-9) = 3(y+3)$	$m = 4/3$	$b = -15$
ii) 2		$b = -9$



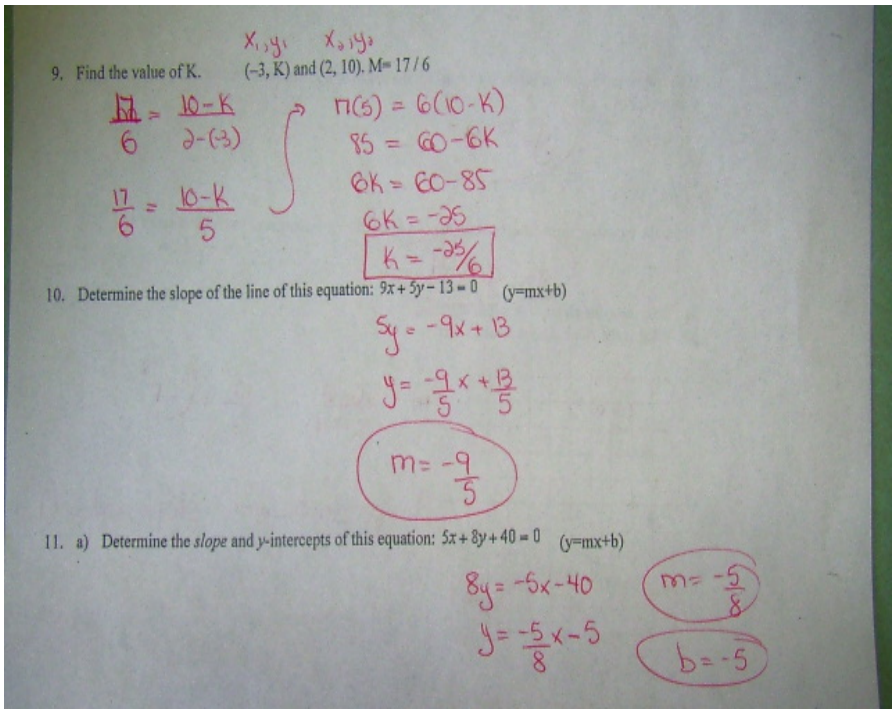
8. Complete the chart:

Equation	Slope	y-intercept
i) $4(x-9)=3(y+3)$	$m=4/3$	$b=-15$
ii) $\frac{2}{3}y+6=7x$	$m=21/2$	$b=-9$
iii) $5(2-y)=10x-30$	$m=-2$	$b=8$

(i) $4x-36=3y+9$
$-3y=-4x+45$
$y=\frac{4}{3}x-15$

(ii) $2y+18=21x$
$2y=21x-18$
$y=\frac{21}{2}x-9$

(iii) $10-5y=10x-30$
$-5y=10x-40$
$y=-2x+8$



x_1, y_1 x_2, y_2

9. Find the value of K. (−3, K) and (2, 10). M= 17 / 6

$\frac{17}{6} = \frac{10-K}{2-(-3)}$ → $17(5) = 6(10-K)$

$\frac{17}{6} = \frac{10-K}{5}$ $85 = 60-6K$

$6K = 60-85$

$6K = -25$

$K = -25/6$

10. Determine the slope of the line of this equation: $9x + 5y - 13 = 0$ (y=mx+b)

$5y = -9x + 13$

$y = \frac{-9}{5}x + \frac{13}{5}$

$m = \frac{-9}{5}$

11. a) Determine the *slope* and *y*-intercepts of this equation: $5x + 8y + 40 = 0$ (y=mx+b)

$8y = -5x - 40$

$y = \frac{-5}{8}x - 5$

$m = \frac{-5}{8}$

$b = -5$

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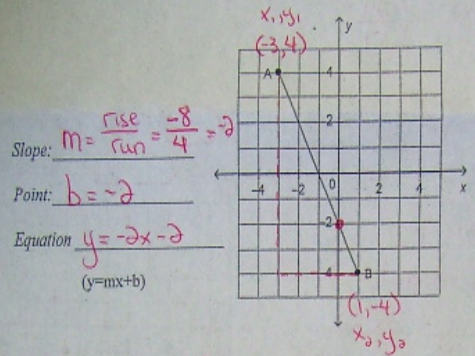
12.



Slope: $m = \frac{rise}{run} = \frac{-8}{4} = -2$

Point: $b = -2$

Equation $y = -2x - 2$

(y=mx+b)

13. A line passes through R(6, 9) and K(−6, 15).
   a) What is the slope of line RK?
   b) What is the slope parallel to RK?
   c) What is slope perpendicular to RK.

x_1, y_1 x_2, y_2

a) $m_{RK} = \frac{15-9}{-6-6} = \frac{6}{-12} = -\frac{1}{2}$

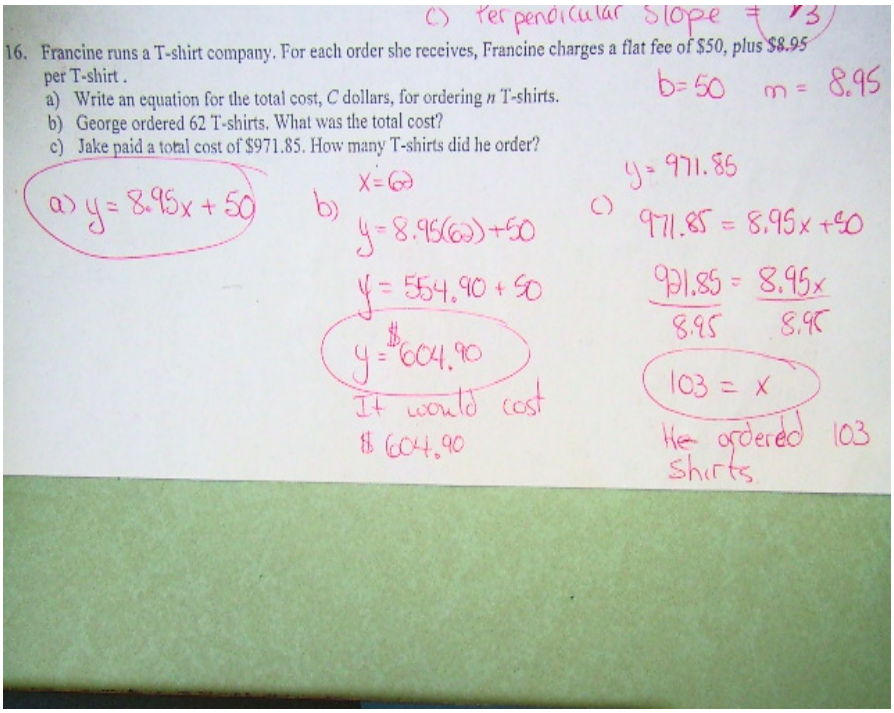
b) Parallel slope $= -\frac{1}{2}$

c) Perpendicular slope $= \frac{2}{1}$

16. Francine runs a T-shirt company. For each order she receives, Francine charges a flat fee of $50, plus $8.95 per T-shirt .
   a) Write an equation for the total cost, C dollars, for ordering n T-shirts.
   b) George ordered 62 T-shirts. What was the total cost?
   c) Jake paid a total cost of $971.85. How many T-shirts did he order?

$b = 50$ $m = 8.95$

$x = 60$ $y = 971.85$


c) Perpendicular slope = -1/3
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b = 50 m = 8.95
a) y = 8.95x + 50
b) x = 62
y = 8.95(62) + 50
y = 554.90 + 50
y = $604.90
It would cost $604.90
c) y = 971.85
971.85 = 8.95x + 50
971.85 / 8.95 = 8.95x / 8.95
103 = x
He ordered 103 shirts.