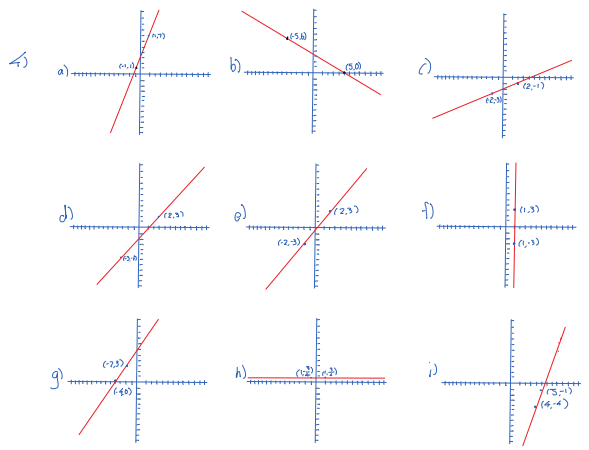


By Jersey Zikora

- 1) i) $-\frac{3}{2}$ ii) $-\frac{3}{4}$ iii) undefined
 iv) 0 v) -10 vi) 1
- 2) i) $\frac{7}{2}$ ii) $-\frac{3}{4}$ iii) $\frac{5}{6}$ iv) $\frac{7}{11}$
- 3) i) 4 ii) 28 iii) $\frac{2}{5}$ iv) $-\frac{1}{3}$
- 5) D(-2,3) 6.) k=3 7.) k=2
- 8) $g=R$
- 9) a) $m=1$ b) $g=|x+7|$; D(0,7)
 c) $g=-3x+13$; B(0,13)
 d) $3 > 5$ unit²
- 10) a) $g=-\frac{1}{2}x+3$
 b) $y=\frac{1}{2}x+6$
 c) $g=2x-4$
 d) ?
- 11) a) $m=-2$
 b) $c=12$
 c) $k=2$
- 12) Distance=2
- 13) i) A
 ii) C
 iii) B
 iv) D
 v) G

Solutions to difficult problems:

3. iii) (k, k^2) & $(-1, 1)$ $m = \frac{-3}{5}$
 $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - k^2}{1 - (-1)} = \frac{-3 - k^2}{2}$
 $-\frac{3 - k^2}{2} = \frac{-3}{5} \Rightarrow 5(-3 - k^2) = -6 \Rightarrow -15 - 5k^2 = -6 \Rightarrow -5k^2 = 9 \Rightarrow k^2 = -\frac{9}{5}$



2) iv) $(15, 3a)$ $(9a, 5)$ slope $m=a$

$$\frac{5-3a}{9a-15} = a$$

$$5-3a = a(9a-15)$$

$$5-3a = 9a^2-15a$$

$$0 = 9a^2-12a-5$$

$$0 = 9x^2-12x-5$$

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a} = \frac{12 \pm \sqrt{144+4(9)(5)}}{18}$$

9a-15 = 3(3a-5)

$$\frac{a-b}{b-a} = -1$$

$$\frac{5-3a}{3(3a-5)} = a$$

$$\frac{-1}{3} = a$$

For this question, you can use either the Q.F. or simplify it with the formula's than: $abc = -1$ $b-a$

#3) 18) $(k, \frac{1}{k^2})$ $(-1, \frac{1}{4})$ $m = \frac{-3}{5}$

$$\frac{1 - \frac{1}{k^2}}{-1 - k} = \frac{-3}{5}$$

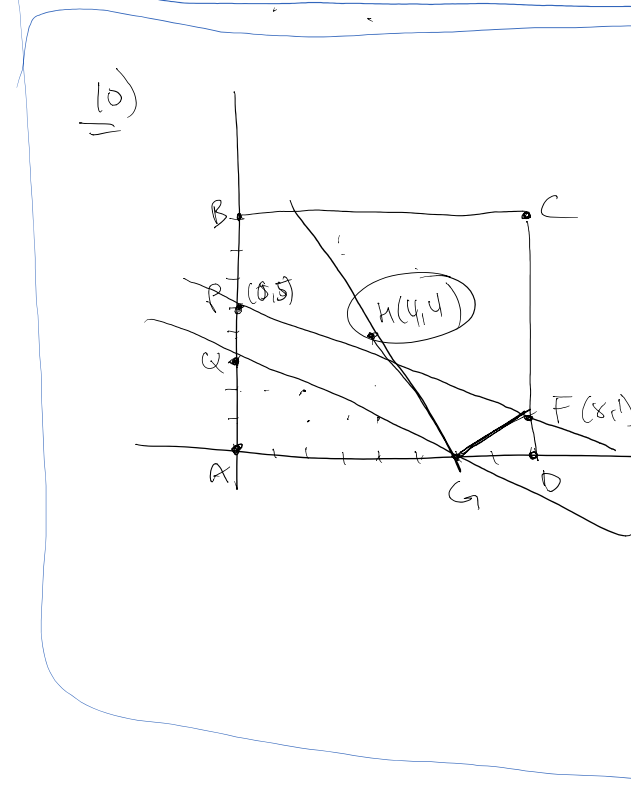
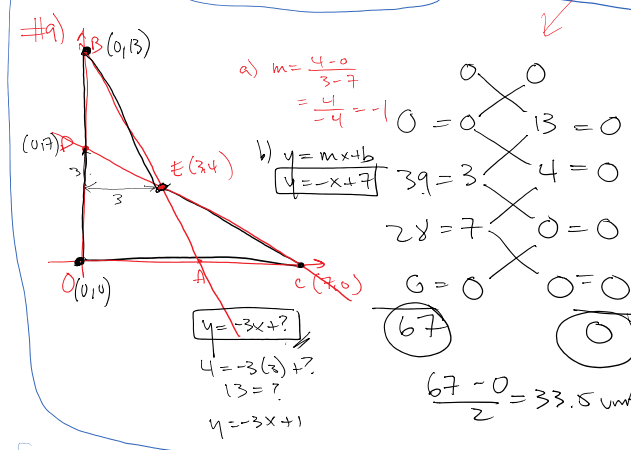
$$\frac{k^2 - 1}{k+1} = \frac{-3}{5}$$

$$\frac{(k+1)(k-1)}{k+1} = \frac{-3}{5}$$

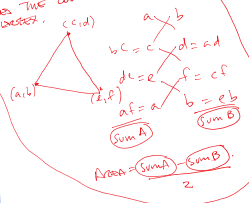
$$k-1 = \frac{-3}{5}$$

$$k = 1 - \frac{3}{5} = \frac{2}{5}$$

Factor the equations as a difference of squares



GETTING THE AREA IS NOT THAT HARD. YOU CAN PUT IT UP INTO TWO OR MORE TRIANGLES. THE METHOD I USE PRESENTS THE CONCEPTS OF THE VECTORS.



- a) $m = -\frac{4}{8} = -\frac{1}{2}$
 $y = -\frac{1}{2}x + 3$
- b) G (6, 0)
- c) slope of QG
 $m = -\frac{1}{2}$
 $m_2 = 2$
 $y = 2x + ?$
 $y = 2(4) + ?$
 $y = 2x - 4$

If you want the slope of a perpendicular line, take the "negative reciprocal" of the slope.
 ie: $m_1 = \frac{3}{4}$ $m_2 = -\frac{4}{3}$
 "flip it and then change the sign"

