

Total: $\frac{57}{57}$

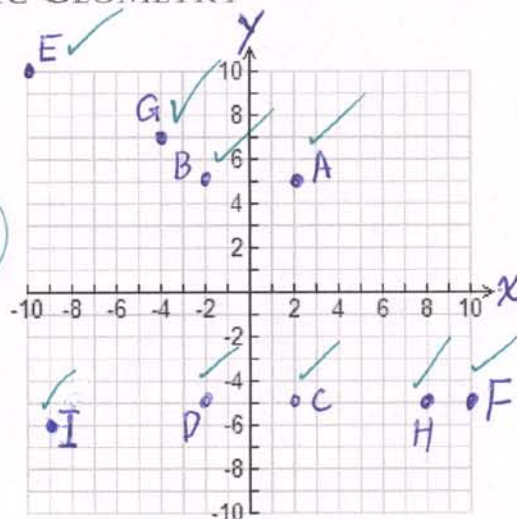
IMPORTANT REVIEW OF ANALYTIC GEOMETRY

1. Plot the following points on the provided grid.

- (a) $A(2,5)$
 (b) $B(-2,5)$
 (c) $C(2,-5)$
 (d) $D(-2,-5)$
 (e) $E(-10,10)$
 (f) $F(10,-5)$
 (g) $G(-4,7)$
 (h) $H(8,-5)$
 (i) $I(-9,-6)$

2. Calculate the slope of each of the following line segments.

- (a) AB 0
 (b) CD 0
 (c) EF $-\frac{3}{4}$
 (d) GH -1
 (e) IA 1
 (f) BC $-\frac{5}{2}$
 (g) DE $-\frac{15}{8}$
 (h) FG $-\frac{6}{7}$
 (i) HI $\frac{1}{17}$



3. Use the values in the given tables to plot the graphs of the given relations.

Relation A		Relation B	
x	y	x	y
0	-6	-4	10
1	-3	-2	-2
2	0	0	-6
3	3	2	-2
4	6	4	10

4. Classify each relation in 3 as linear or non-linear. In addition, write an equation for each of the relations.

Relation A

Linear or non-linear? Why?

First differences are constant

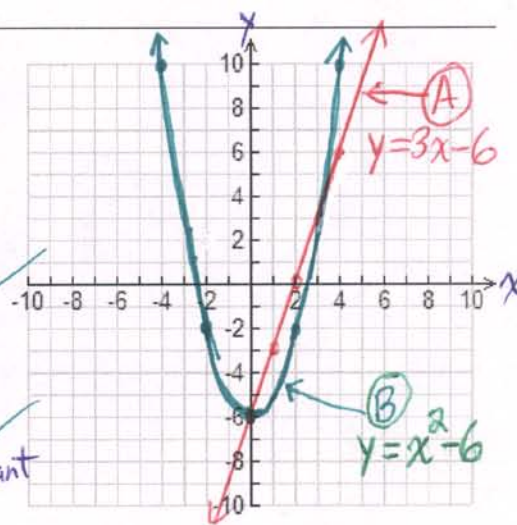
Equation: $y = 3x - 6$

Relation B

Linear or non-linear? Why?

First differences are not constant

Equation: $y = x^2 - 6$



5. The following questions apply to the graph shown at the far right.

- (a) y-intercept = 2
 (b) slope = $-\frac{3}{4}$
 (c) equation: $y = -\frac{3}{4}x + 2$
 (d) Description of the relation in words:

The y-co-ordinate is equal to two more than the x-co-ordinate multiple by $-\frac{3}{4}$

- (e) Meaning of the slope:

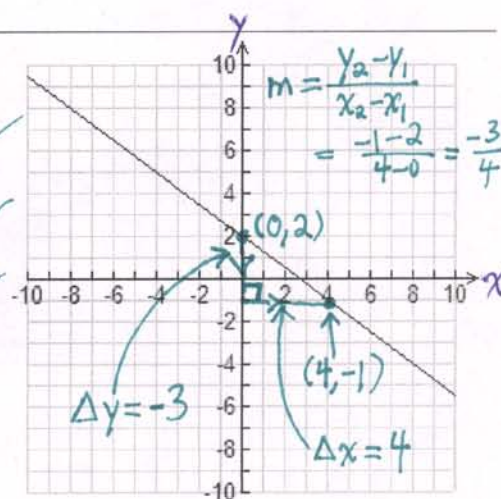
The y-co-ordinate decreases by $\frac{3}{4}$ for every increase of 1 in the x-co-ordinate.

- (f) Meaning of the y-intercept:

The value of the y-co-ordinate when the x-co-ordinate is 0

- (g) Explanation of why the slope must be negative:

Δx and Δy must have opposite signs, which means that $m = \frac{\Delta y}{\Delta x}$ must be negative



$\frac{13}{13}$

6. Bank A offers a student banking account that charges \$0.75 per withdrawal. Bank B offers a student banking package for \$0.50 per withdrawal plus a monthly flat fee of \$2.00. How would you decide which bank to choose for your financial needs?

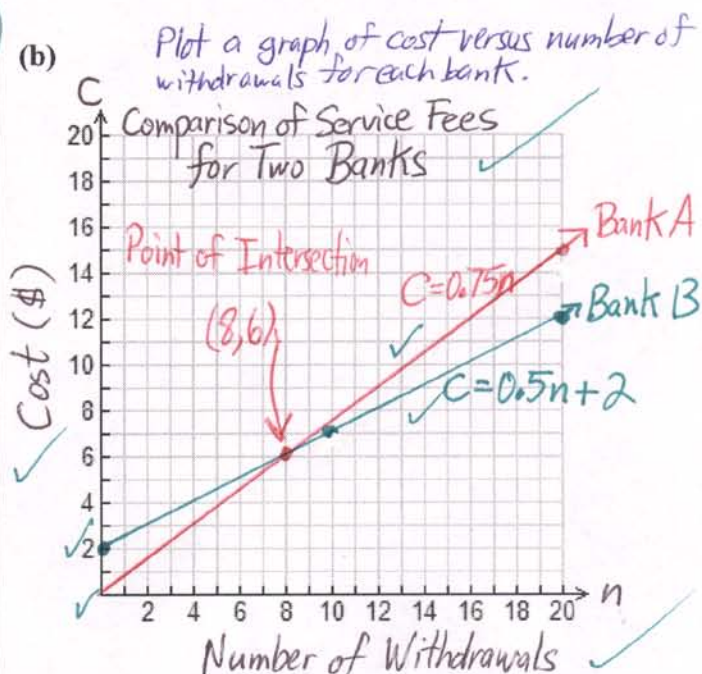
(a) Write equations for the cost for each bank account.

Let C represent the cost in \$
Let n represent the number of withdrawals.

Bank A: $C = 0.75n$

Bank B: $C = 0.5n + 2$

(b)



(c) Explain the meaning of the slope and y-intercept of each relation.

Bank A:

• $m = 0.75$

Meaning → \$0.75 per withdrawal

• $b = 0$

Meaning → There is no cost if no withdrawals are made.

Bank B:

• $m = 0.5$

Meaning → \$0.50 per withdrawal

• $b = 2$

Meaning → If no withdrawals are made, the cost is \$2.00

(d) Which bank would you choose? Explain fully.

The choice would depend on the number of withdrawals that I would expect to make.

For seven withdrawals or fewer, Bank A is less expensive. If exactly eight withdrawals are made, each bank charges the same amount. For more than eight withdrawals, Bank B is less expensive.