

NAME:

Notes 7-3

Proportional and Non-proportional Relationships

Int 1

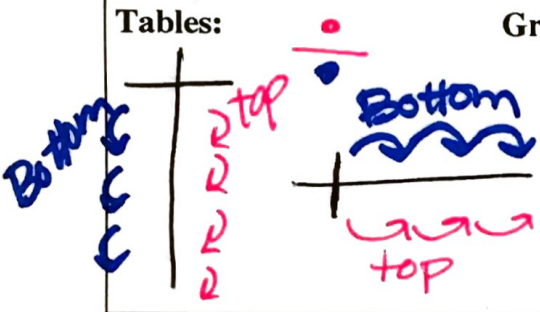
Unit 7

Constant Rate of Change (C.R.O.C.)

Definition:

Rate stays the same!

Tables:



Graphs:

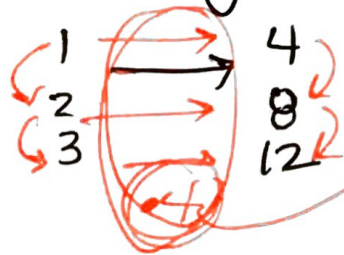


Constant of Proportionality

Definition:

Multiply the COP

COP



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Kate

Proportional Relationships

1. Start with NOTHING (0,0)

Have a CROC

2. Tables

a. Find the CROC

b. Multiply COP across

1	→	4
2	→	8
3	→	12

3. Graphs

a. (0,0) origin

Straight line (CROC)

Etienne

NON - Proportional Relationships

1. Start with something (0, —)

• maybe a CROC

2. Tables:

1	→	5
2	→	6
3	→	8

3. Graphs:

- curvy

- Not @ (0,0)



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Ethan

# of Hours Worked	Amount Earned (\$)
0	10
1	16
2	22
3	28
4	34
5	40
6	46
7	52
8	58
9	64
10	70

+1  
+1  
+1

← Different →

+6  
+6  
+6  
+6  
+6  
+6  
+6  
+6  
+6  
+6

CROC:  $\frac{\$6}{1\text{hr}}$

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Kate

# of Hours Worked	Amount Earned (\$)
0	0
1	6
2	12
3	18
4	24
5	30
6	36
7	42
8	48
9	54
10	60

+1  
+1

+6  
+6  
+6  
+6  
+6  
+6

CROC:  $\frac{\$6}{1\text{hr}}$

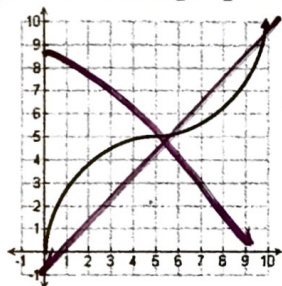
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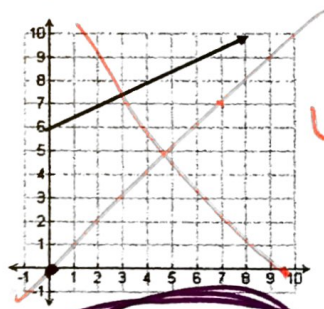
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What does a proportional relationship look like on a graph?

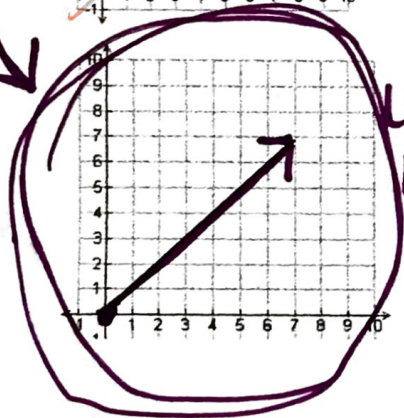


- Not straight



like Ethan

NOT @ (0,0)



like Kate

- (0,0) origin  
- straight line

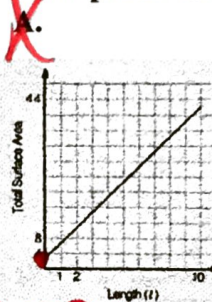
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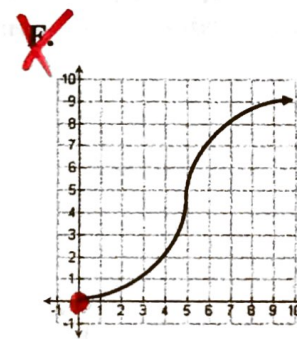
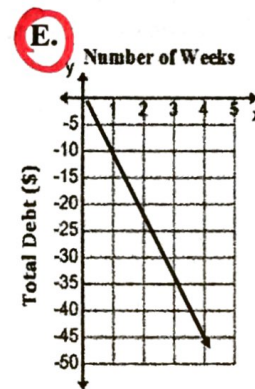
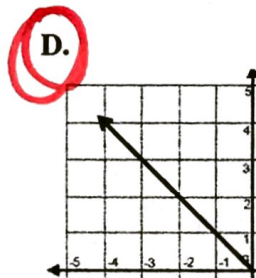
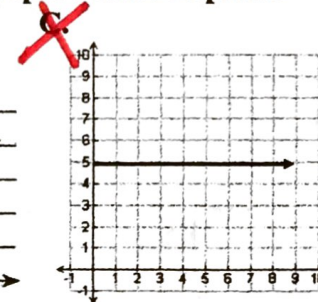
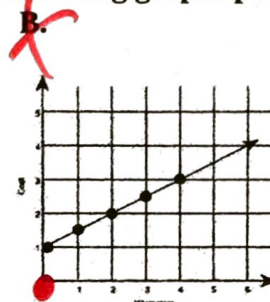
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Example 1: Are the following graphs proportional? Explain.



NOT @ (0,0)





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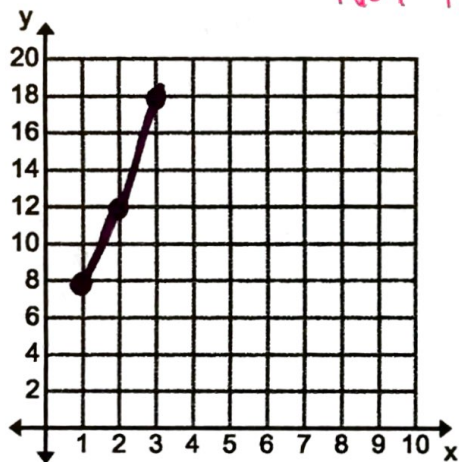
Ex. 2: A biker kept track of how far he had ridden each hour. Plot the points on the graph below. Are the number of miles ridden proportional to the number of hours?

Hours	Number of Miles Walked
1	8
2	12
3	18

**NO!**

-Not completely straight & Not through (0,0)

Miles



Hours

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Ex. 3: Alex started with \$25 in his wallet. Then, he earned \$8 each day. Complete the table below. Is the amount of money he earns proportional to how many days have passed?

Time (days)	0	1	2	3
Amt. of money in wallet	25	\$33	41	49

time \$

NO. doesn't start @ (0,0)

Ex. 4: The table below represents the total cost of tickets to a play depending on how many tickets you buy. Is the total cost of the tickets proportional to how many tickets you buy?

Tickets	4	5	7	10
Total Cost	\$18	\$22.50	\$31.50	\$45

**Yes**

$$\frac{18}{4} = \frac{22.50}{5} = \frac{31.50}{7} = \frac{45}{10} = \frac{4.50}{1}$$