

Notes: Graph Proportional Equations / Situations

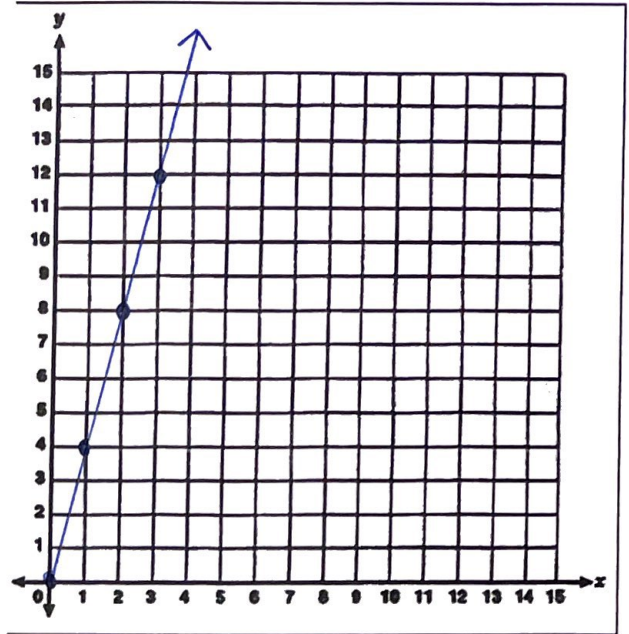
$$y = kx \quad k = \frac{y \text{ value}}{x \text{ value}} \quad (k = \text{constant of proportionality})$$

A1) Given an (x,y) table:

- > Graph the points and connect with a ray
- > Write the equation of the line

x	y
0	0
1	4
2	8
3	12

$y = kx$
 $y = 4x$
 -unit rate
 ↓
 k



2 Characteristics of any proportional equation:

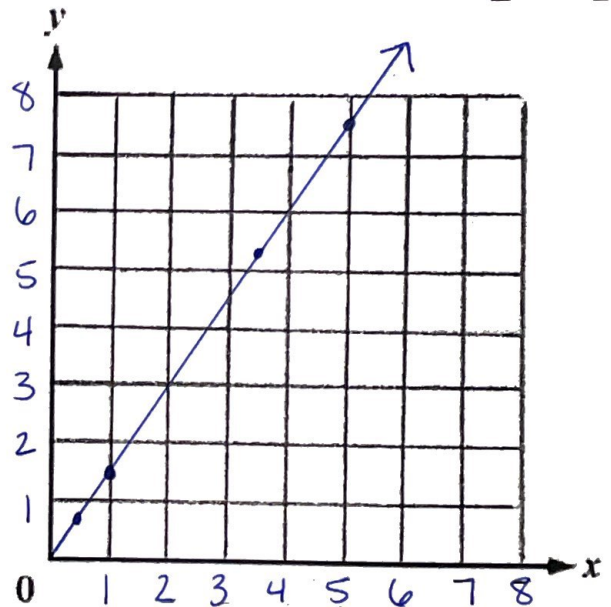
- 1) Straight line (constant change)
- 2) through origin

A2) Given an (x,y) table:

- > Graph the points and connect with a ray
- > Write the equation of the line

x	y
0	0
1/2	3/4
1	1 1/2
3 1/2	5 1/4
5	7 1/2

$y = 1.5x$
 unit rate
 ↓
 k



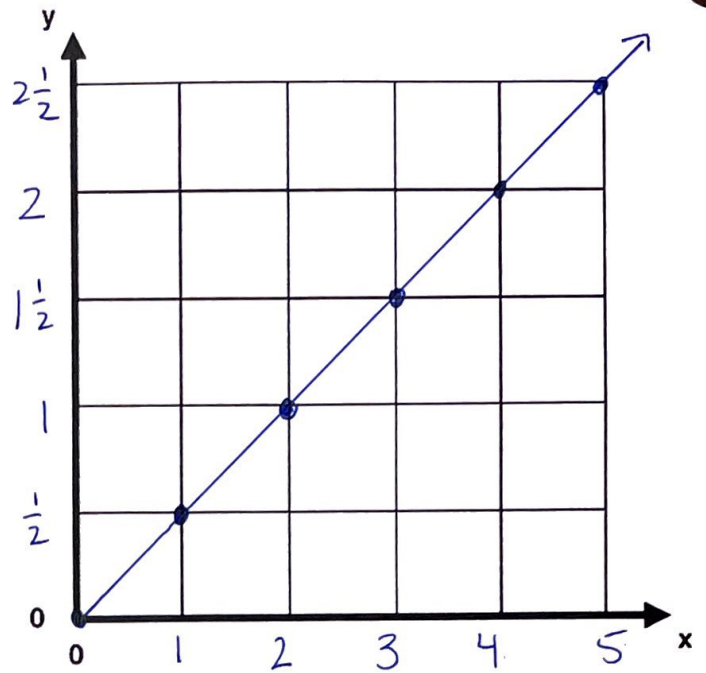
B1) Given an equation $y = \frac{1}{2}x$

- Complete an (x,y) table
- Graph the points and connect with a ray

x	y
0	0
1	$\frac{1}{2}$
2	1
3	$1\frac{1}{2}$
4	2
5	$2\frac{1}{2}$

$\frac{1}{2}(0)$
 $\frac{1}{2}(1)$
 $\frac{1}{2}(2)$
 $\frac{1}{2}(3)$
 $\frac{1}{2}(4)$
 $\frac{1}{2}(5)$

$y = \frac{1}{2}x$

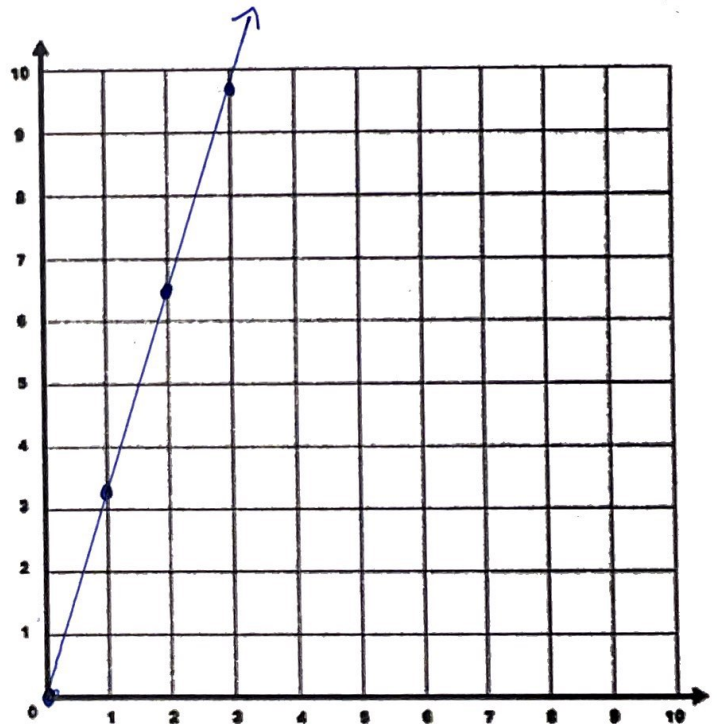


B2) Given an equation $y = 3.25x$

- Complete an (x,y) table
- Graph the points and connect with a ray

x	y
0	0
1	3.25
2	6.5
3	9.75
4	13
5	16.25

$3.25(0)$
 $3.25(1)$
 $3.25(2)$
 $3.25(3)$
 $3.25(4)$
 $3.25(5)$



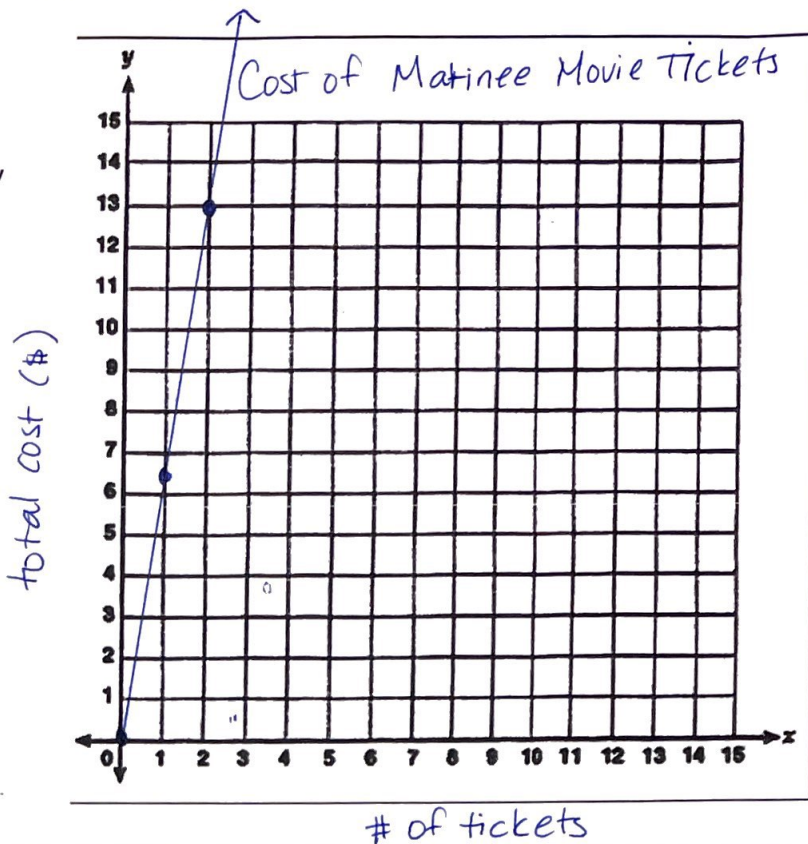
C1) Given an proportional situation:

Matinee movie tickets cost \$6.50 each. Write an equation to buy x tickets

- Write the equation of the line \downarrow K
- Complete an (x,y) table
- Graph the points and connect with a ray

x	y	
0	0	$6.50(0)$
1	6.50	$6.50(1)$
2	13	$6.50(2)$
3	19.50	$6.50(3)$
4	26	$6.50(4)$
5	32.50	$6.50(5)$
6	39	$6.50(6)$
7	45.50	$(6.50)7$
8	52	$6.50(8)$

$$y = 6.50x$$



C2) Given an proportional situation:

Carmel Apple pops cost \$0.25. Write an equation to buy x pops.

- Write the equation of the line \downarrow K
- Complete an (x,y) table
- Graph the points and connect with a ray

x	y	
0	0	$0.25(0)$
1	0.25	$0.25(1)$
2	0.50	$0.25(2)$
3	0.75	$0.25(3)$
4	1	$0.25(4)$
5	1.25	$0.25(5)$

$$y = 0.25x$$

