

Constant OF Proportionality

What is: 'Constant of Proportionality'?

The constant value of the ratio of two proportional quantities: x and y; usually written $y = kx$

OR
 $K = y/x$

What is k?

k is called the unit rate

What is the constant of proportionality?

x	1	2	3	8
y	1.5	3	4.5	12

$y = 1.5x$
- $y = kx$ OR $k = y/x$

$1.5/1 = 1.5$
 $3/2 = 1.5$
 $4.5/3 = 1.5$
 $12/8 = 1.5$
is proportional

A table shows a proportional relationship when all ordered pairs represent

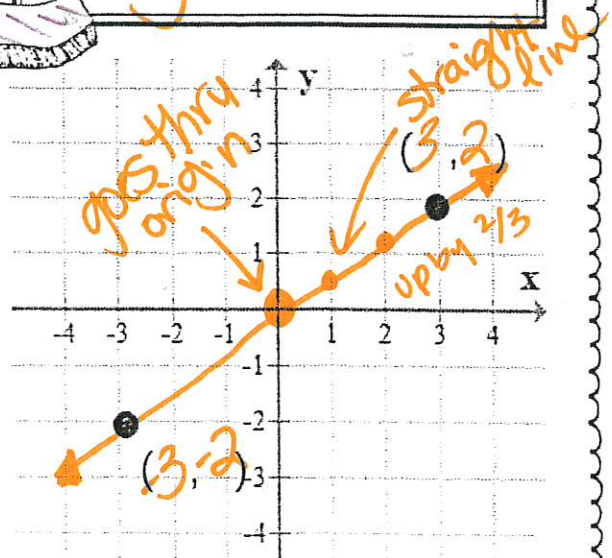
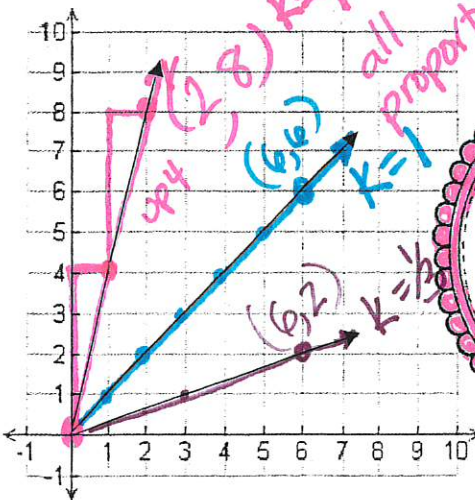
Try it Out!

What is the constant of proportionality for the line that runs through both these points?

$2 \div 3 = 2/3$
 $-2 \div -3 = 2/3$
 $y = 2/3x$

Sometimes constant of proportionality is called rate of change or slope!

Which of these lines has a constant of proportionality of 4?



I. Use the tables to test for proportionality.

①

Videos	Price
1	5
3	15

- Proportional
 Not Proportional

$V \cdot 5 = \$$

②

Days	Miles
2	22
4	42

- Proportional
 Not Proportional

③

Kids	Candy
2	6
5	15
8	32

- Proportional
 Not Proportional

④

Books	Cost
3	21
4	28
5	35

- Proportional
 Not Proportional

$B \cdot 7 = \$$

⑤

HW	Points
3	4
9	12
15	20
30	40

- Proportional
 Not Proportional

$H \cdot 1/3 = P$

⑥

Hours	Miles
5	30
7	40
10	60
13	96

- Proportional
 Not Proportional

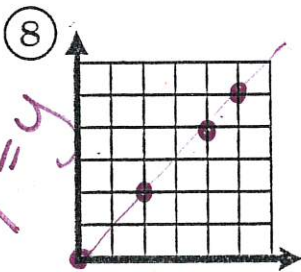
⑦

Games	Time
2	6
8	24
10	30
15	45

- Proportional
 Not Proportional

$G \cdot 3 = T$

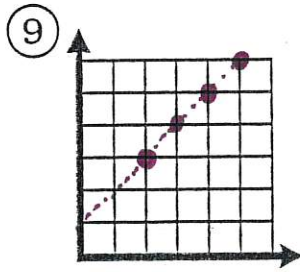
II. Use the points to draw a graph, and test it for proportionality.



- (0,0) (2,2)
(4,4) (5,5)

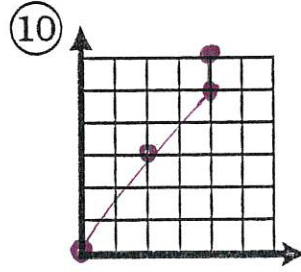
- Proportional
 Not Proportional

$x \cdot 1 = y$



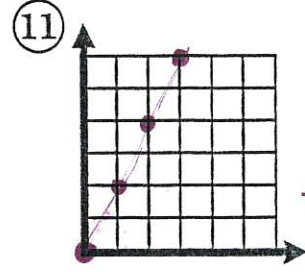
- (2,3) (4,5)
(3,4) (5,6)

- Proportional
 Not Proportional



- (0,0) (4,5)
(2,3) (4,6)

- Proportional
 Not Proportional



- (0,0) (1,2)
(2,4) (3,6)

- Proportional
 Not Proportional

$x \cdot 2 = y$