

1.6 Identifying Proportional Relationships in Graphs

7.RP.A.2

YOU TRY

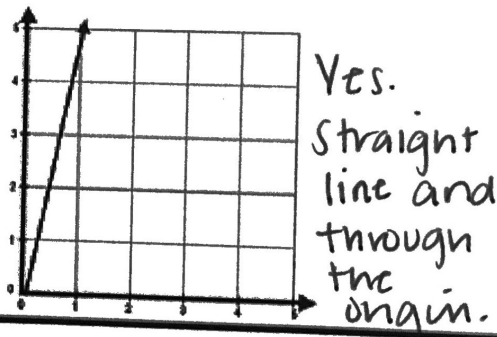
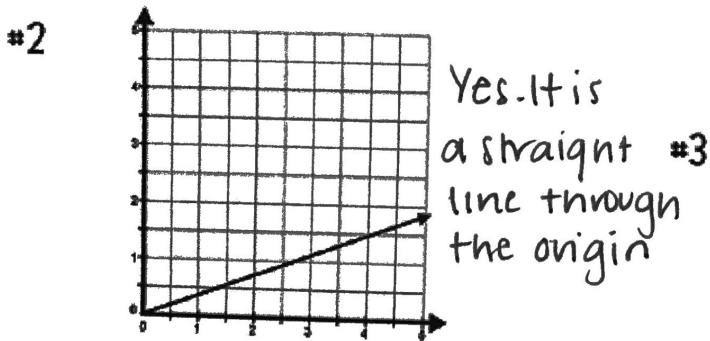
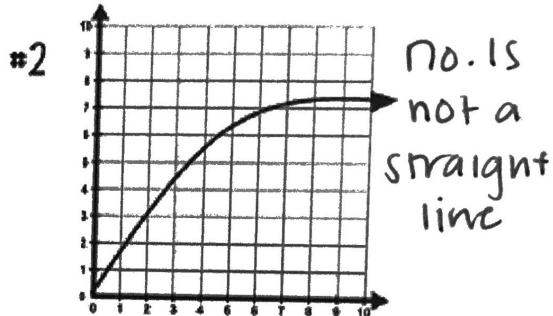
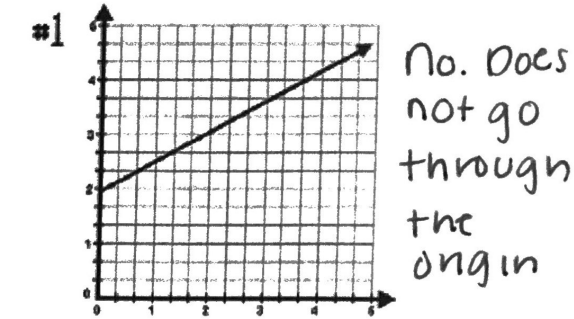
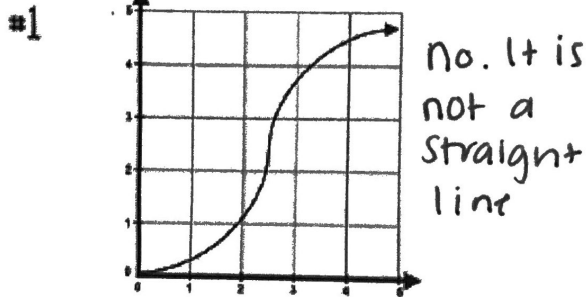
WHEN IS A GRAPH PROPORTIONAL?

A graph is proportional if:

- 1) goes through the origin
- 2) Straight line

EXAMPLES

Do the graphs below show a proportional relationship? Why or why not?



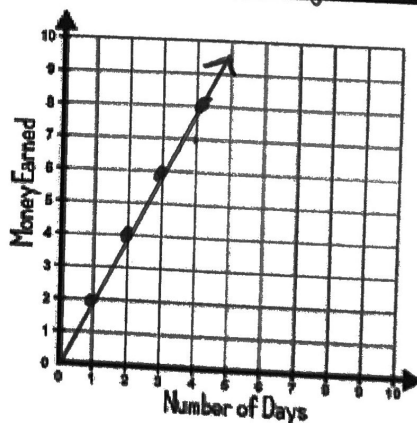
Word Problems

EXAMPLE #1

Every day that Knox completes his chores, he earns \$2. Determine whether the number of days he completes his chores is proportional to the amount of money he earns by making a table and graphing the ordered pairs.

Number of Days (x)	1	2	3	4
Money Earned (y)	2	4	6	8

$$y = 2x$$

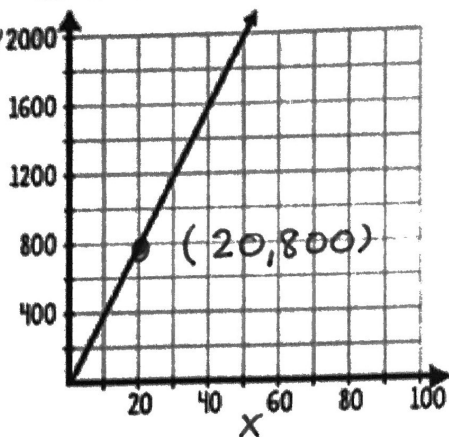


WRITING EQUATIONS FROM GRAPHS AND TABLES

To write an equation from a graph or table:

EXAMPLE #2

- 1) Calculate the constant of proportionality (k) or unit rate
- 2) Put it in for k in $y = kx$



$$k = y/x = 800/20 = 40$$

$$y = 40x$$

EXAMPLE #1

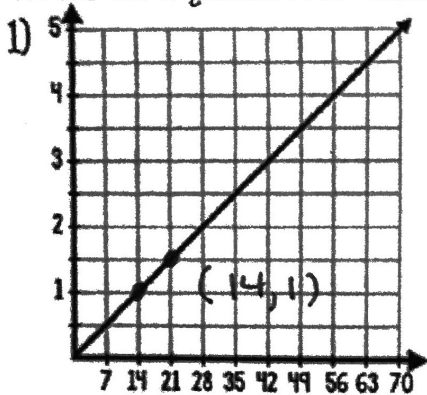
x	3	9	15	21
y	1	3	5	7

$$k = y/x = 1/3$$

$$y = 1/3x$$

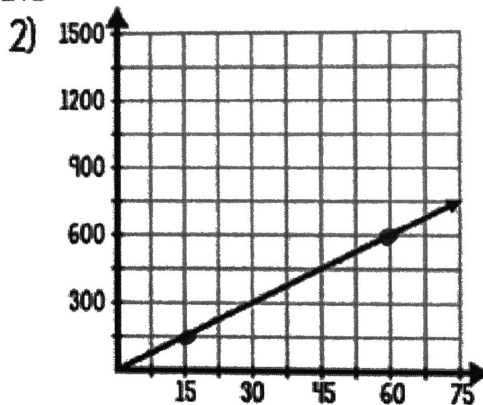
YOU TRY

Write an equation for each graph or table



$$k = y/x = 1/14$$

$$y = 1/14x$$



$$k = y/x = 600/60 = 10$$

$$y = 10x$$

3)

x	0.2	0.4	0.6	0.8
y	0.8	1.6	2.4	3.2

$$k = y/x = \frac{0.8}{0.2} = 4$$

$$y = 4x$$

4)

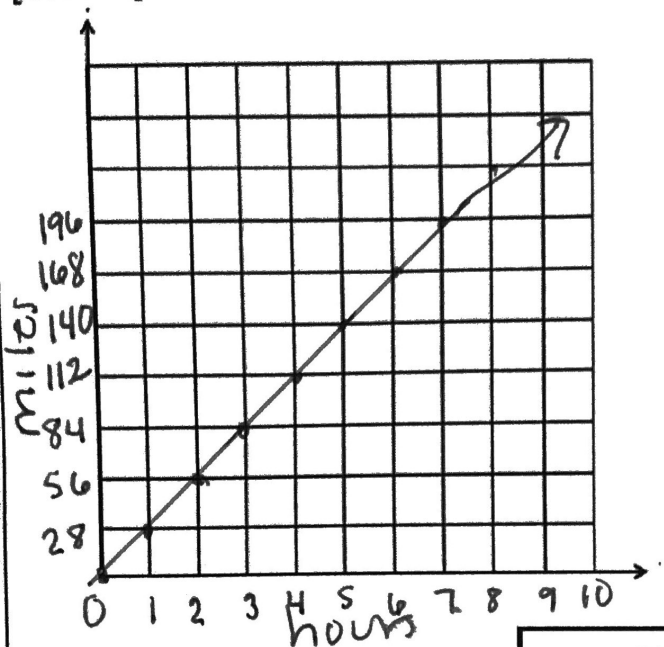
x	20	40	60	80
y	5	10	15	20

$$k = y/x = 5/20 = .25$$

$$y = .25x$$

Missing information and answer the question.

[GRAPH]



[TABLE]

HOURS	MILES
1	28
2	56
3	84
4	112
5	140
6	168
7	196
8	224
9	252

$84/3 = 28$

[EQUATION]

$y = 28x$

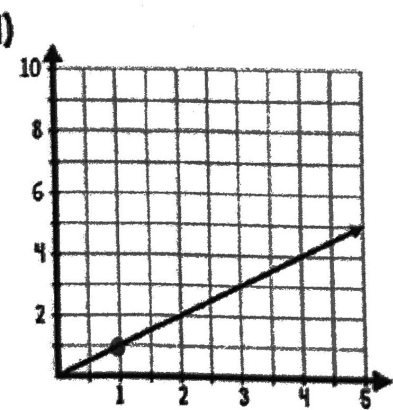
[VERBAL DESCRIPTION]

A white-tailed deer travels at 28 miles per hour

[PROPORTIONALITY]

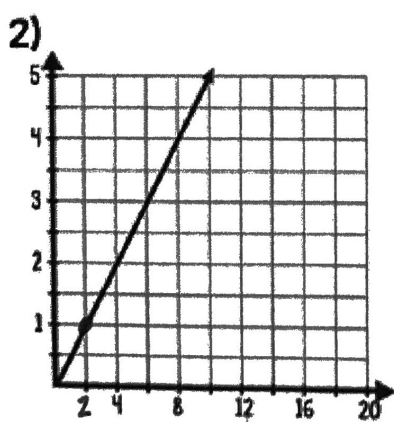
Yes. Straight line through the origin.

Write an equation graphs shown below.



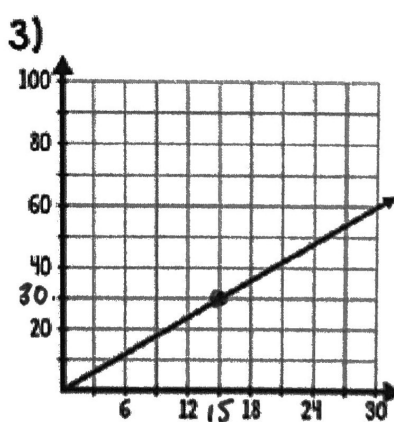
$y = 1x$

$k = y/x = 5/5 = 1$



$k = y/x = 5/10 = .5$

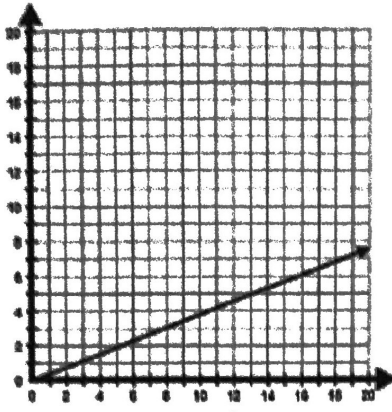
$y = .5x$



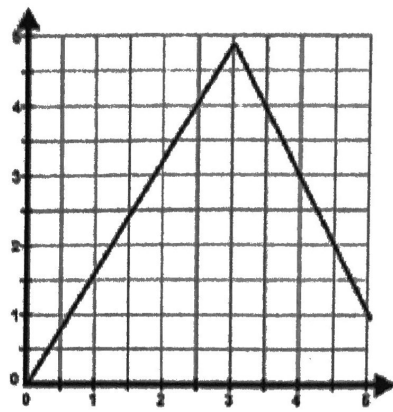
$k = y/x = 30/15 = 2$

$y = 2x$

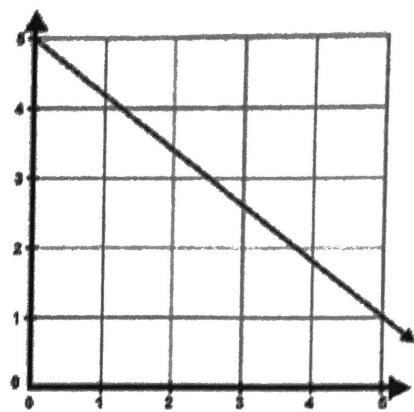
Are the following graphs proportional? Justify your answer.



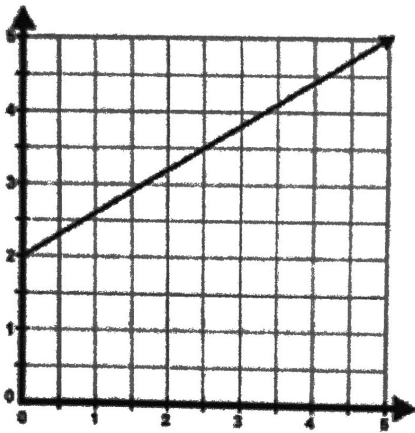
Yes. Straight line through origin.



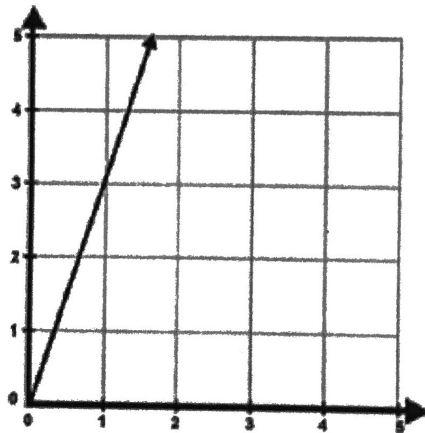
No. not a straight line



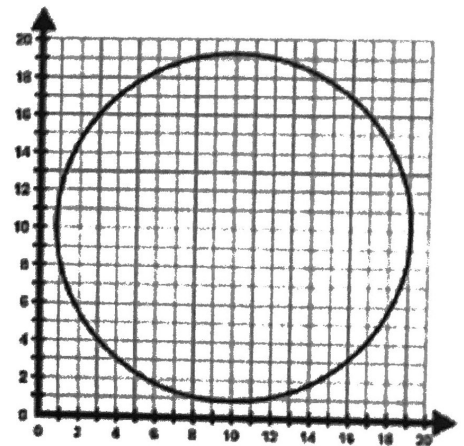
No. Does not go through the origin.



No. Does not go through the origin



Yes. Straight line through the origin



No. Not a straight line.