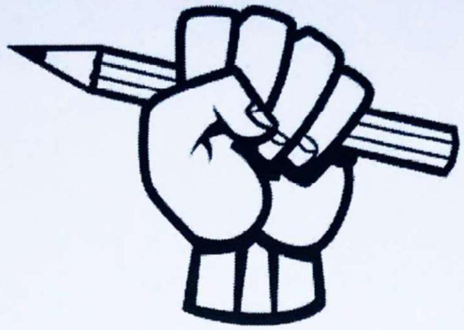
Name: ANSWERS! Period:



1 Line must be straight

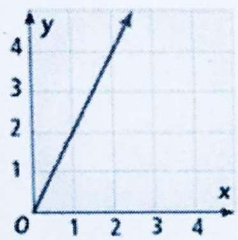
2 Line must include (0,0)

Unit 1 Practice Test

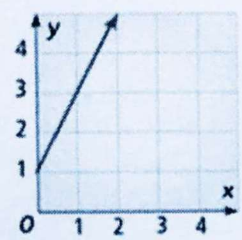
Calculators OK

1. Select **all** of the graphs below that show a proportional relationship.

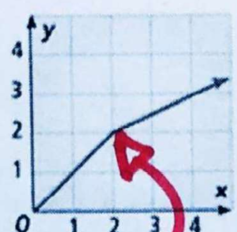
a)



~~b)~~

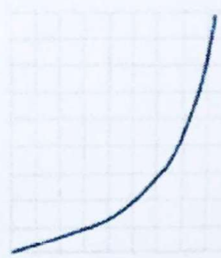


~~c)~~

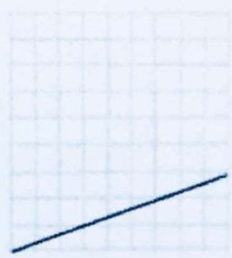


cannot be bent!

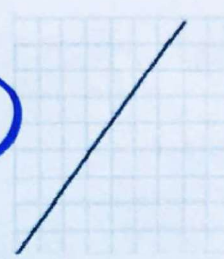
~~d)~~



e)



f)



2. Select **all** of the tables below that show a proportional relationship.

$\frac{y}{x}$ must be constant for all data pairs!

a)

x	y
0	1
2	3
4	5
6	7

$\frac{1}{0}$ = undefined

like graph, needs the origin!

d)

x	y
0	0
2	5
10	4
20	50

$\frac{5}{2} = 2.5$

$\frac{4}{10} = 0.4$

b)

x	y
0	0
2	10
3	15
7	35

$\frac{10}{2} = 5$

$\frac{15}{3} = 5$

$\frac{35}{7} = 5$

e)

x	y
0	0
4	12
5	15
9	27

$\frac{12}{4} = 3$

$\frac{15}{5} = 3$

$\frac{27}{9} = 3$

c)

x	y
0	0
12	3
16	4
24	6

$\frac{3}{12} = 0.25$

$\frac{4}{16} = 0.25$

$\frac{6}{24} = 0.25$

f)

x	y
0	0
2	20
3	30
4	50

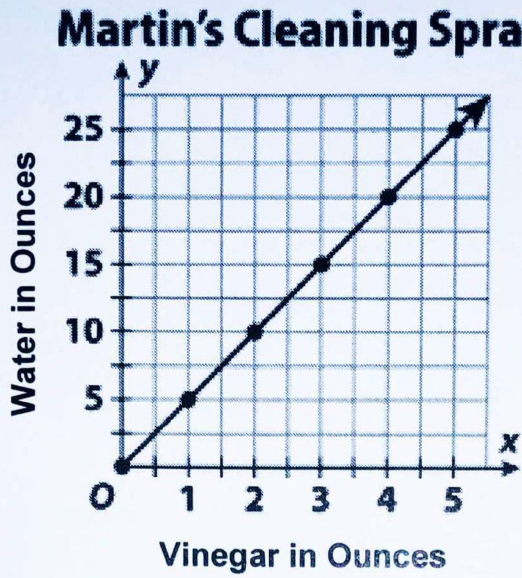
$\frac{20}{2} = 10$

$\frac{30}{3} = 10$

$\frac{50}{4} = 12.5$

careful!

3. Martin makes a cleaning spray with water and vinegar as set forth in the graph below.



$\frac{y}{x}$ $\frac{5}{1} = 5$

Part(a) What is the constant of proportionality (r)?

Answer: 5

Part(b) Write the equation in $w = rv$ form where w is the water used in ounces and v is the vinegar used in ounces.

Answer: $w = 5v$

Part(c) Write the unit rate coordinate. (1 , 5)

Part(d) How much water would be needed for 10 ounces of vinegar?

Answer: 50 ounces

$\frac{\text{water}}{\text{vinegar}}$ $\frac{5}{1} = \frac{}{10}$

$5 \times 10 \div 1 = 50$

4. The table shows Ms. Parker's earnings at her part time job for each of the past four weeks.

$\frac{y}{x}$ $\frac{54.05}{2.3} = 23.5$ $\frac{y}{x}$ $\frac{117.5}{5} = 23.5$

Hours Worked (x)	1.8	2.3	4.9	5
Money Earned (y)	\$42.30	\$54.05	\$115.15	\$117.50

$\frac{y}{x}$ $\frac{42.3}{1.8} = 23.5$ $\frac{y}{x}$ $\frac{115.15}{4.9} = 23.5$

Part(a) Does the table show a proportional relationship of money earned per hours worked?

Answer: Yes

Part(b) Write the equation in $t = rh$ form where t is the total earned in dollars and h is the number of hours worked.

Answer: $t = 23.5h$

Part(c) If this data was set forth in a graph, what would be the unit rate coordinate.

Answer: (1, 23.5)

Part(d) How much would Ms. Parker earn after working a total of 53 hours?

Answer: \$1,245.50

$\frac{\$}{\text{hour}}$ $\frac{23.5}{1} = \frac{}{53}$

$23.5 \times 53 \div 1 =$
1,245.50

5. A train and a large truck are both hauling goods between two large cities. The train is moving at a constant speed of 50 miles per hour. The truck's data is shown below.

$\frac{y}{x} = \frac{92}{2} = 46$

Means 46 miles per hour

Part(a) What is the truck's constant of proportionality (r)?

Answer: 46

Part(b) Write the equation for the truck in $d = rt$ form where d is the total distance travelled in miles and t is the total time in hours.

Answer: $d = 46t$

Part(c) Which is travelling faster, train or truck?

Answer: Train

The train's 50 mph is faster than The truck's 46 mph