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#4 Write a sentence for each

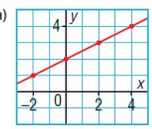
#5 a, b, c (i, ii, iii)

Write out the chart and show the common change in x any in y if it exist.

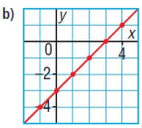
7 a,d

Nov 9-9:08 PM

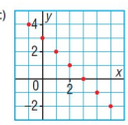
4. Which graphs represent a linear relation? How do you know?

a) 

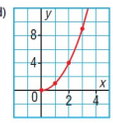
Linear

b) 

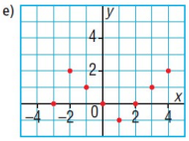
Linear

c) 

Linear

d) 

Non-Linear

e) 

Non-Linear

Nov 19-8:37 PM

5. For each table of values below:

i) Does it represent a linear relation?

ii) If the relation is linear, describe it.

iii) If the relation is not linear, explain how

a)

x	y
1	4
2	13
3	22
4	31
5	40

+1: +9, +9, +9

Linear

b)

x	y
9	8
8	11
7	14
6	17
5	20

+1: +3, +3, +3, +3

Linear

c)

x	y
0	0
1	2
2	6
3	12
4	20

+1: +2, +4, +6, +8

Non linear

Nov 19-8:40 PM

7. Copy and complete each table of values.

a) $y = 2x$

x	y
1	2
2	4
3	6
4	8

$y = 2(1)$

$y = 2$

$y = 2(2)$

$y = 4$

d) $y = x - 2$

x	y
4	2
5	3
6	4
7	5

+1: +1, +1, +1

$x = 4$ | $x = 5$

$y = 4 - 2$ | $y = 5 - 2$

$y = 2$ | $y = 3$

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Class/Homework

Homework

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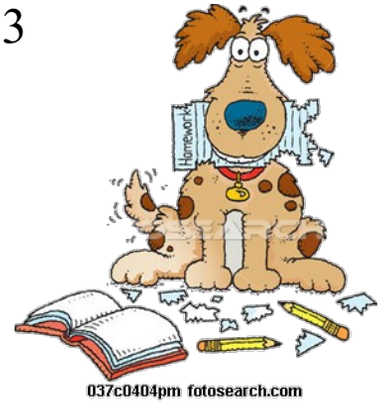


8 a-e

9 a,c

#10 a,c,e

#11,

14

#16

Nov 9-9:03 PM

8. Here is a partially completed table of values for a linear relation.

x	2	3	4	5	6	7	8
y	6	9	12	15	18	21	24

+3

a) Determine the missing values of y. Explain how you found these values.

b) Describe the patterns in the table.

c) Write an equation that represents the linear relation. How do you know that your equation is correct?

d) Graph the data. How are the patterns you described in part b shown in the graph?

e) Suppose you want to determine the value of y when $x = -1$. How could you use the table and equation to do this?

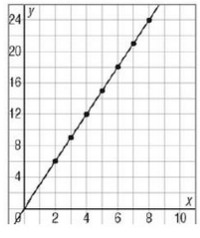
$y = \frac{3}{1}x$

Linear

$y = 3(-1)$

$y = -3$

d)



Nov 21-8:11 AM

9. Each table of values represents a linear relation. Copy and complete each table. Explain your reasoning.

a)

x	y
2	11
3	14
4	17
5	20
6	23

+3

c)

x	y
−4	11
−2	7
0	3
2	−1
4	−5

−4

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x	y
−2	5
0	10
2	15

$\Delta y = 5$

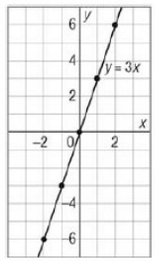
$y = \frac{5}{2}x + 10$

Mar 24-9:21 AM

10. Create a table of values for each linear relation, then graph the relation. Use values of x from -2 to 2.

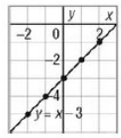
a) $y = 3x$

x	y
-2	-6
-1	-3
0	0
1	3
2	6



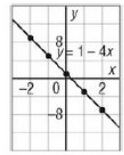
c) $y = x - 3$

x	y
-2	-5
-1	-4
0	-3
1	-2
2	-1



e) $y = 1 - 4x$

x	y
-2	
-1	
0	1
1	
2	



Nov 21-8:12 AM

11. Jin is cycling at an average speed of 4 m/s. He travels a distance, d metres, in t seconds.

a) Write an equation that relates d and t.

b) Create a table of values for this relation.

c) Graph the data. Should you join the points? Explain your reasoning.

d) Is the relation between distance and time linear?

i) How do you know from the table of values?

ii) How you know from the graph?

e) How far does Jin travel in 3.5 h?

f) What time does it take Jin to travel 17 km?

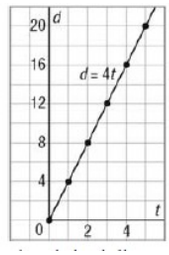
↳ 17 000 m

t	d
0	0
1	4
2	8
3	12

$d = \frac{4}{1}t$

e) $d = 4(12600)$

$d = 50400$ m



Nov 21-8:13 AM

14. Assessment Focus Danica is having a party. She estimates that she will need 3 pieces of pizza for each guest invited, and 6 extra pieces in case someone shows up unexpectedly.

a) Explain why this situation can be represented by the equation $P = 3n + 6$. What do P and n represent in the equation?

b) Make a table of values for the relation.

c) Graph the data. Will you join the points on the graph? Explain.

d) Is the relation linear?

i) How do you know from the table of values?

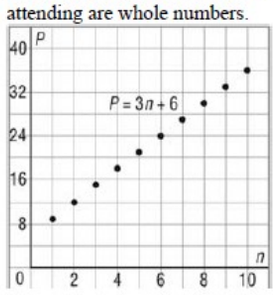
ii) How do you know from the graph?

e) If the relation is linear, explain what this means in the context of this situation.

14. b)

n	P
2	12
4	18
6	24
8	30
10	36

c) I would not join the points because the number o pieces of pizza ordered and the number of people attending are whole numbers.



d) The relation is linear.

i) When the number of people increases by 2, the number of pieces increases by 6.

ii) Points on the graph lie on a straight line.

Nov 21-8:14 AM

15. A small plane is at a height of 1800 m when it starts descending to land. The plane's height changes at an average rate of 150 m per minute.

a) Choose variables to represent the height in metres and the time in minutes since the plane began its descent. Write an equation that relates the height to the time.

b) Graph the equation.

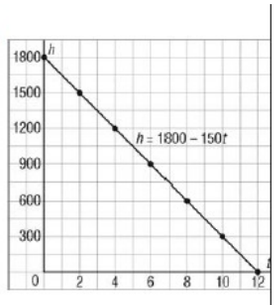
c) What is the height of the plane 6 min after it began its descent?

d) When is the plane 100 m above the ground?

t	d
0	1800 m
1	1650
2	1500
3	1350

$d = \frac{-150}{1} t + 1800$

b)



c) 900 m

d) 11 min 20 s after beginning to descend

Mar 24-9:02 AM

16. Jada rollerblades from Regina to Saskatoon to raise funds for cancer research. The trip 250 km. Jada estimates that she can rollerblade at an average speed of 8 km/h.

a) Choose variables to represent the time Jada has travelled in hours and the distance in kilometres that she has yet to travel. Write an equation that

t	d
0	0
1	8
2	16
3	24

+1 +8

$d = 8t$

$250 = 8t$

$31.25 = t$

$31\frac{1}{4}$ hour

Nov 21-8:14 AM

Graphing Ordered Pairs

The table shows the relationship between a number of CD's and their cost.

Number of CD's	Cost ($)
1	12
2	24
3	36
4	48

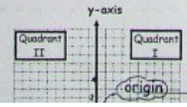
(1,12)
(2,24)
(3,36)
(4,48)

This relationship can be represented by a set of ordered pairs.

The first number of each pair represents the number of CD's, and the second number represents the cost.

What does (4, 48) mean? 4 CD cost $48
What would (36, 3) mean? 36 CD cost $3.00

Ordered pairs can be shown on a grid formed by 2 perpendicular number lines.



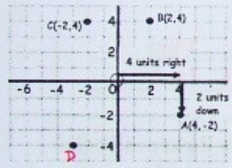
Mar 21-8:31 AM

Plotting or Graphing a Point

Ordered pairs, like (4,-2), can be used to name points on the grid. The first number in the ordered pair is called the x-coordinate. The second number is the y-coordinate.

x-coordinate — y-coordinate

(4, -2)



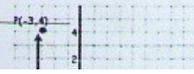
The ordered pair to name point D in the diagram is (-3, -4)

Why is (4,-2) different from (-2,4)?

(4, -2) => you go right 4 down 2

(-2, 4) => you go left 2 up 4

The graph shows how to plot the



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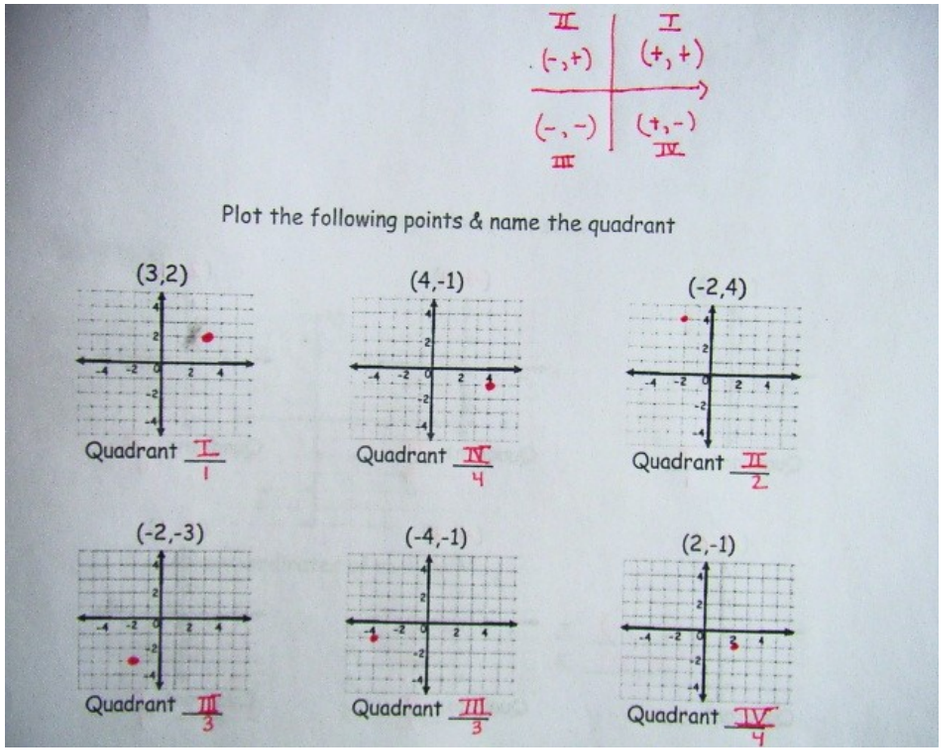
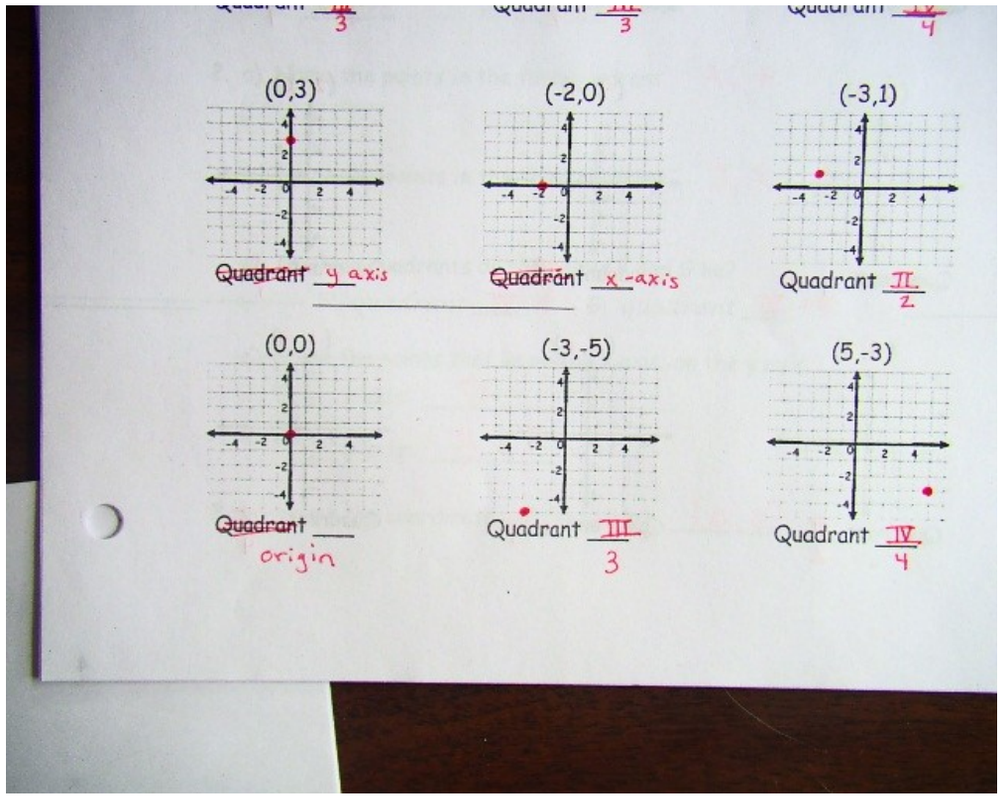
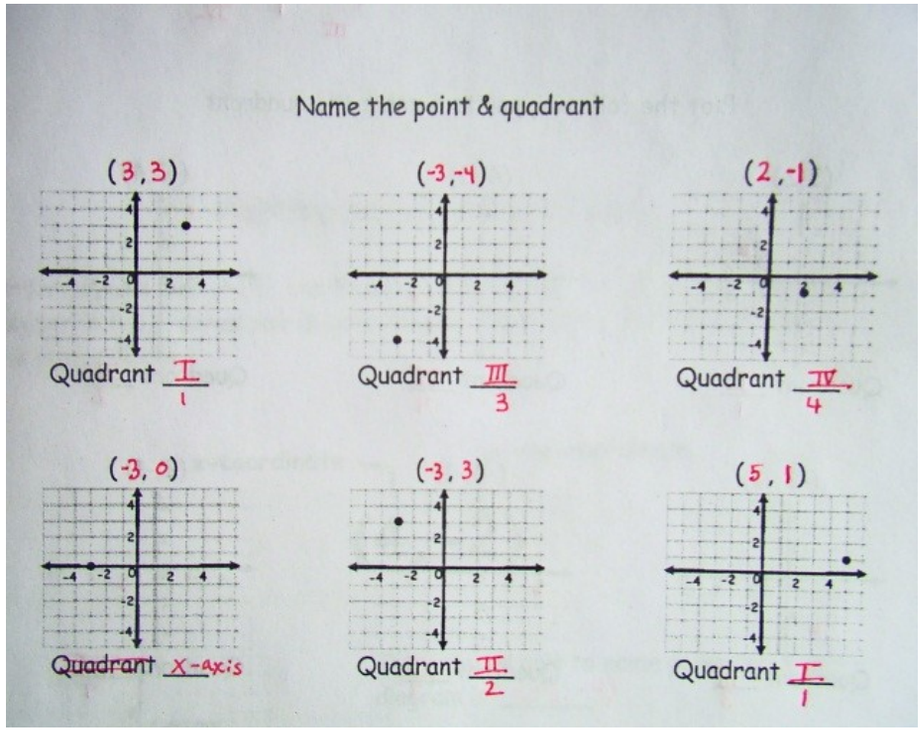


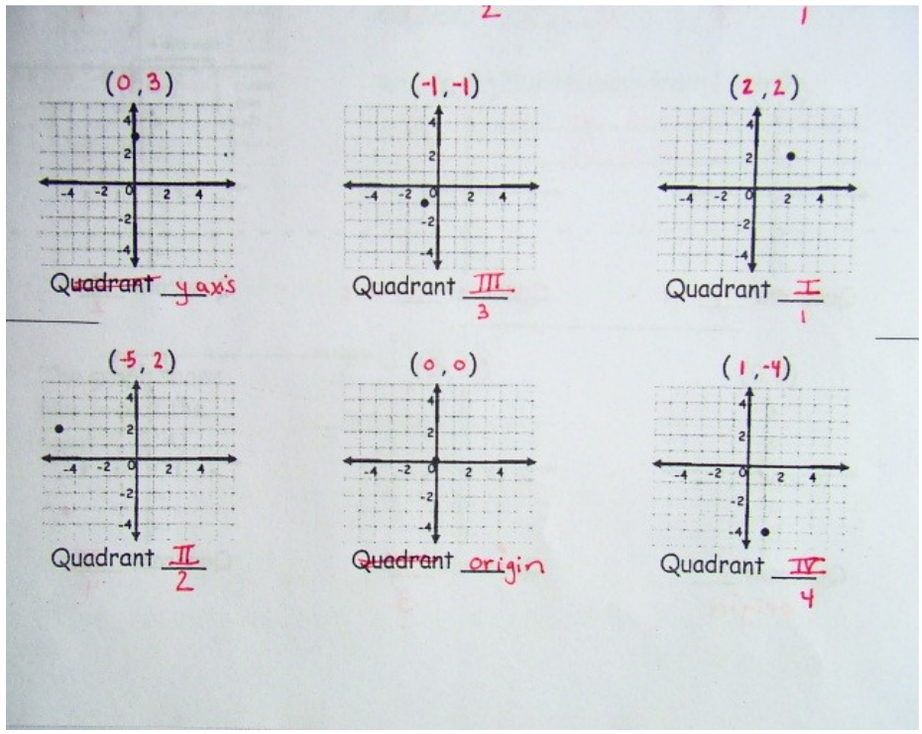
Mar 21-8:32 AM



Mar 21-8:33 AM

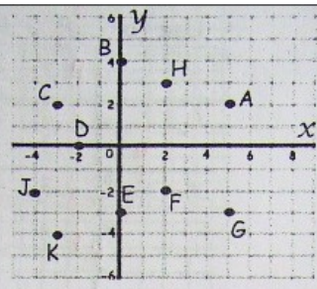


Mar 21-8:33 AM



Mar 21-8:35 AM

Use the grid to answer Questions 1 to 3.



1. State the coordinates of each point.

A. (5, 2)
B. (0, 4)
C. (-3, 2)
D. (-2, 0)
E. (0, -3)
F. (2, -2)
G. (5, -3)
H. (2, 3)
J. (-4, -2)
K. (-3, -4)

2. a) Name the points in the first quadrant. A, H

b) Name the points in the third quadrant. J, K

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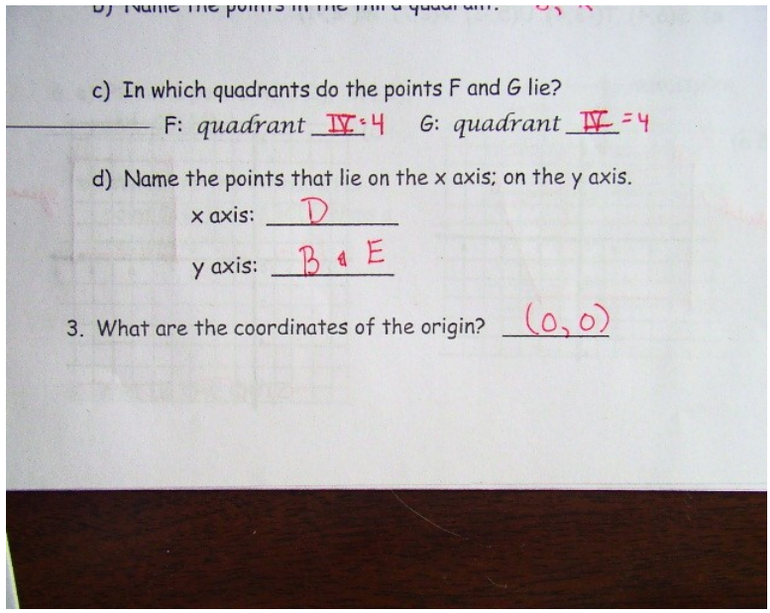


c) In which quadrants do the points F and G lie?

F: *quadrant* IV = 4 G: *quadrant* IV = 4

d) Name the points that lie on the x axis; on the y axis.

x axis: D

y axis: B & E

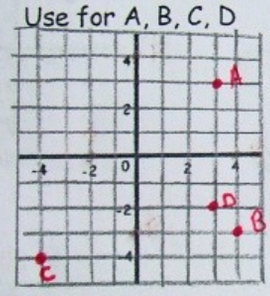
3. What are the coordinates of the origin? (0, 0)

Mar 21-9:34 AM

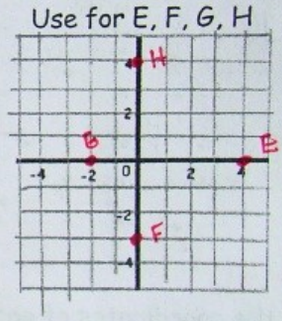
4. Plot each point on a grid.

A(3,3) B(4,-3) C(-4,-4) D(3,-2) E(4,0)
F(0,-3) G(-2,0) H(0,4)

Use for A, B, C, D



Use for E, F, G, H



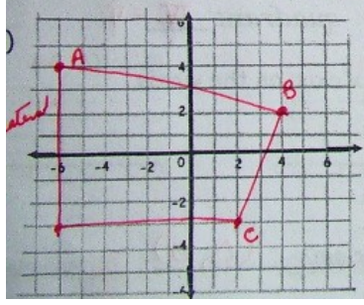
5. Graph each set of points on a separate grid. Join the points in the order given and return to the first point. Name the figure formed in each case.

Mar 21-9:35 AM

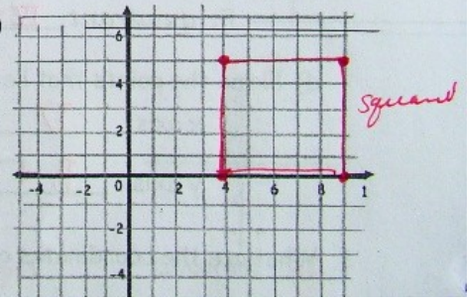
Graph each set of points on a separate grid. Join the points in the order given and return to the first point. Name the figure formed in each case.

a) A(-6,4) B(4,2) C(2,-3) D(-6,-3)
b) E(4,5) F(9,5) G(9,0) H(4,0)
c) K(1,3) L(-6,-4) M(1,-4)
d) P(6,3) Q(0,-5) R(8,-6)
e) S(6,4) T(-3,4) U(5,-1) V(2,7) W(-2,-1)

solutions:



b)



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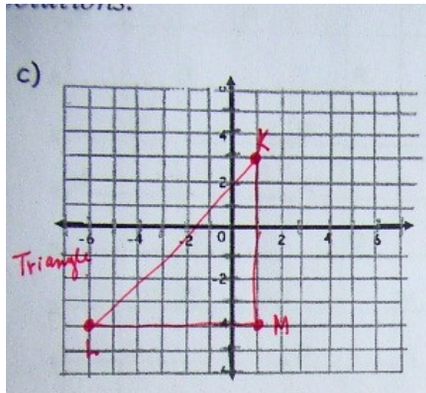
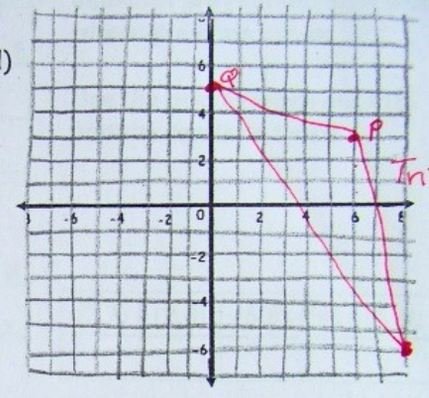
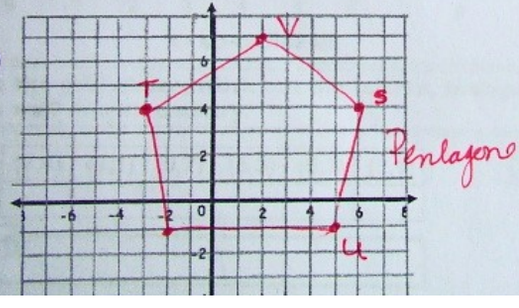
c)



d)



e)



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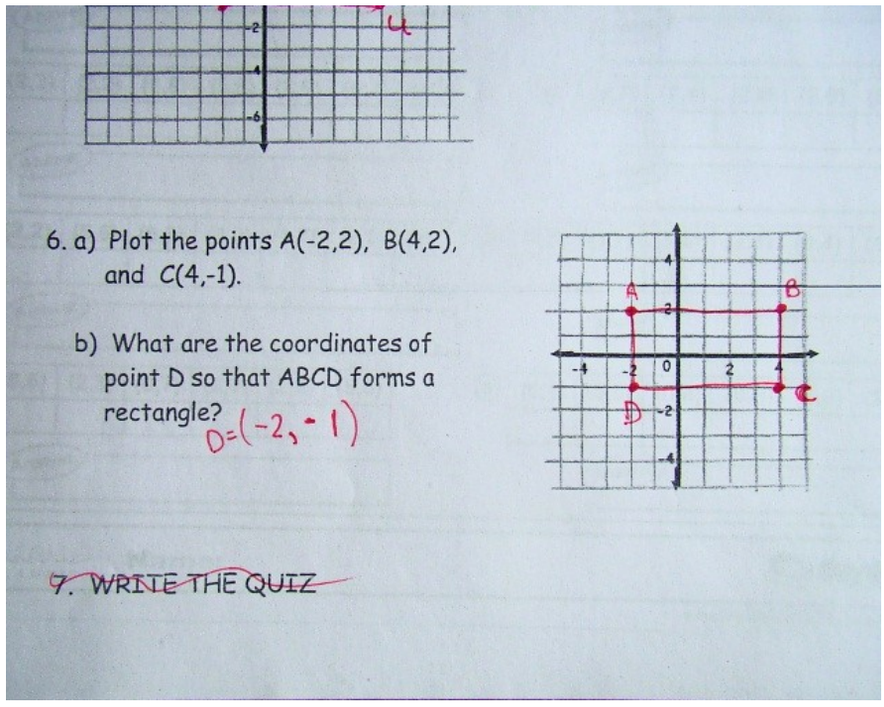

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