EUREKA MATH PUSD

A Story of Units

Pleasanton UNIFIED SCHOOL DISTRICT Mathematics Curriculum

GRADE 5 • MODULE 6

Problem Solving with the Coordinate Plane

Problem Sets

Video tutorials: http://bit.ly/eurekapusd
Info for parents: http://bit.ly/pusdmath

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GRADE 5 • MODULE 6

Problem Solving with the Coordinate Plane

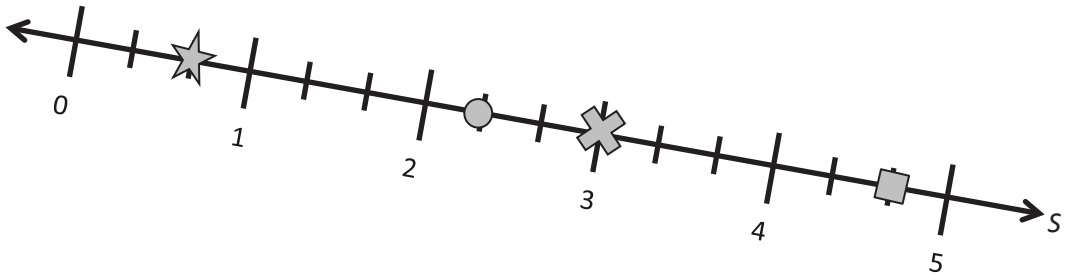
NOTE: Student sheets should be printed at 100% scale to preserve the intended size of figures for accurate measurements. Adjust copier or printer settings to *actual size* and set page scaling to *none*.

Name _____ Date _____

1. Each shape was placed at a point on the number line S. Give the coordinate of each point below.

a. ✖ _____ b. ★ _____

c. ● _____ d. ■ _____

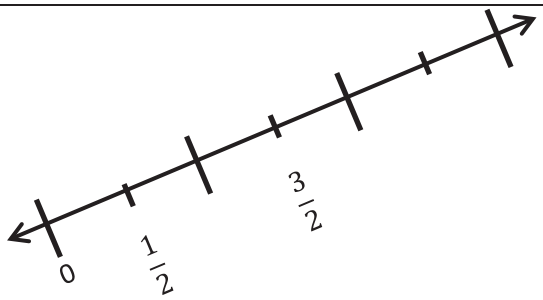


2. Plot the points on the number lines.

a.

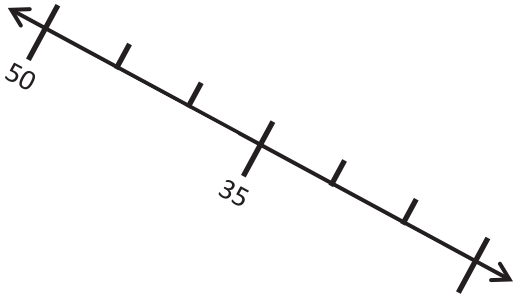
Plot A so that its distance from the origin is 2.

b.



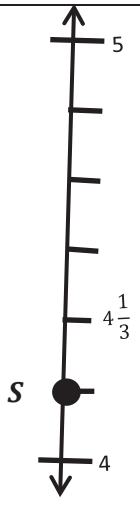
Plot R so that its distance from the origin is $\frac{5}{2}$.

c.



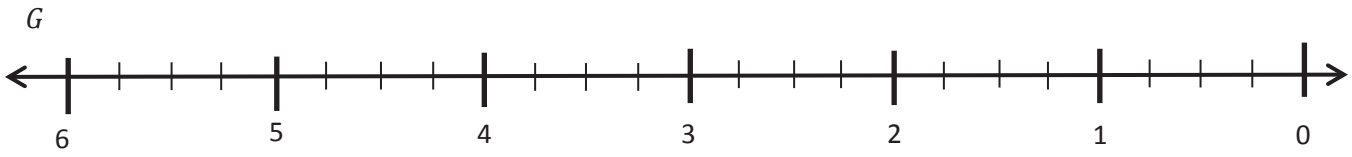
Plot L so that its distance from the origin is 20.

d.



Plot a point T so that its distance from the origin is $\frac{2}{3}$ more than that of S.

3. Number line $\boldsymbol{G}$ is labeled from 0 to 6. Use number line $\boldsymbol{G}$ below to answer the questions.



a. Plot point A at $\frac{3}{4}$.

b. Label a point that lies at $4\frac{1}{2}$ as B.

c. Label a point, C, whose distance from zero is 5 more than that of A.

The coordinate of C is _____.

d. Plot a point, D, whose distance from zero is $1\frac{1}{4}$ less than that of B.

The coordinate of D is _____.

e. The distance of E from zero is $1\frac{3}{4}$ more than that of D. Plot point E.

f. What is the coordinate of the point that lies halfway between A and D? _____
Label this point F.

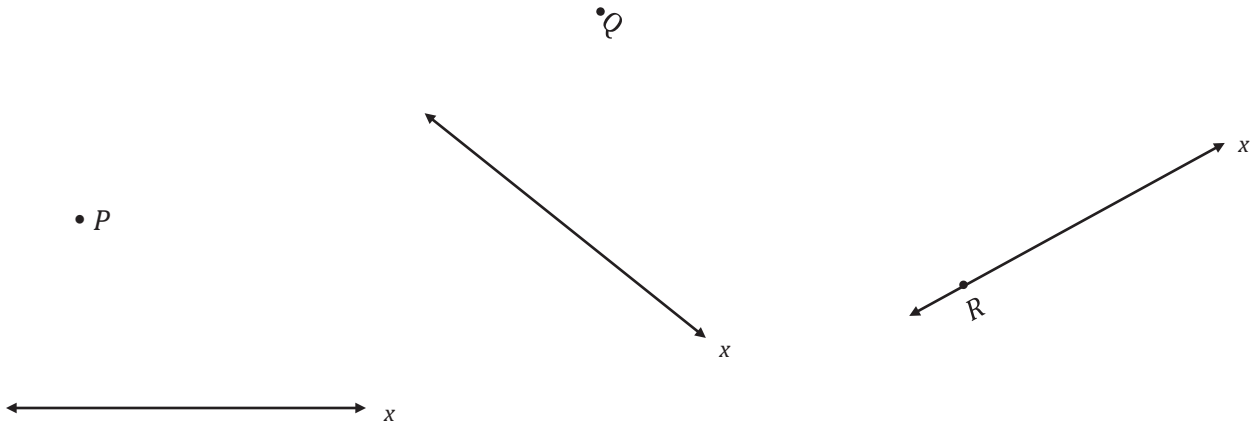
4. Mrs. Fan asked her fifth-grade class to create a number line. Lenox created the number line below:

Parks said Lenox's number line is wrong because numbers should always increase from left to right. Who is correct? Explain your thinking.

5. A pirate marked the palm tree on his treasure map and buried his treasure 30 feet away. Do you think he'll be able to easily find his treasure when he returns? Why or why not? What might he do to make it easier to find?

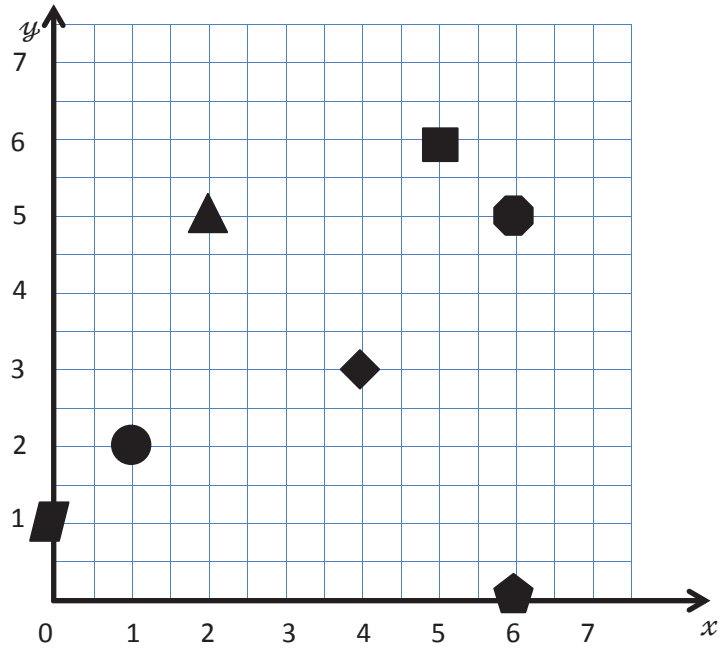
Name _____ Date _____

1. a. Use a set square to draw a line perpendicular to the x-axes through points P, Q, and R. Label the new line as the y-axis.



b. Choose one of the sets of perpendicular lines above and create a coordinate plane. Mark 7 units on each axis and label them as whole numbers.

2. Use the coordinate plane to answer the following.



a. Tell the shape at each location.

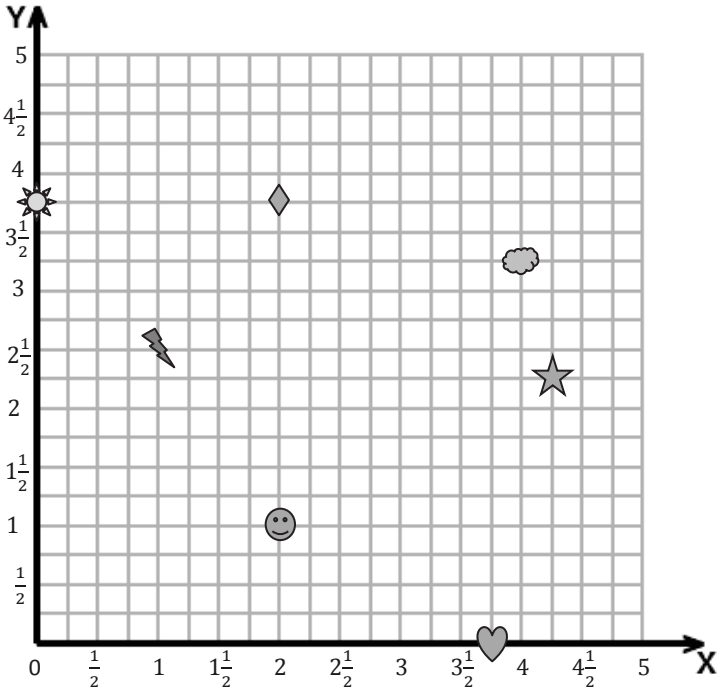
x-coordinate	y-coordinate	Shape
2	5	
1	2	
5	6	
6	5	

b. Which shape is 2 units from the y-axis?

c. Which shape has an x-coordinate of 0?

d. Which shape is 4 units from the y-axis and 3 units from the x-axis?

3. Use the coordinate plane to answer the following.



a. Fill in the blanks.

Shape	x-coordinate	y-coordinate
Smiley Face		
Diamond		
Sun		
Heart		

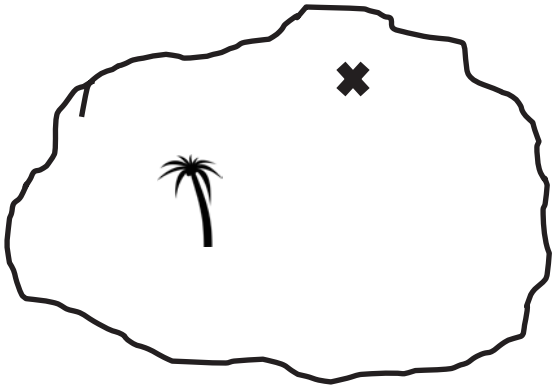
b. Name the shape whose x-coordinate is $\frac{1}{2}$ more than the value of the heart's x-coordinate.

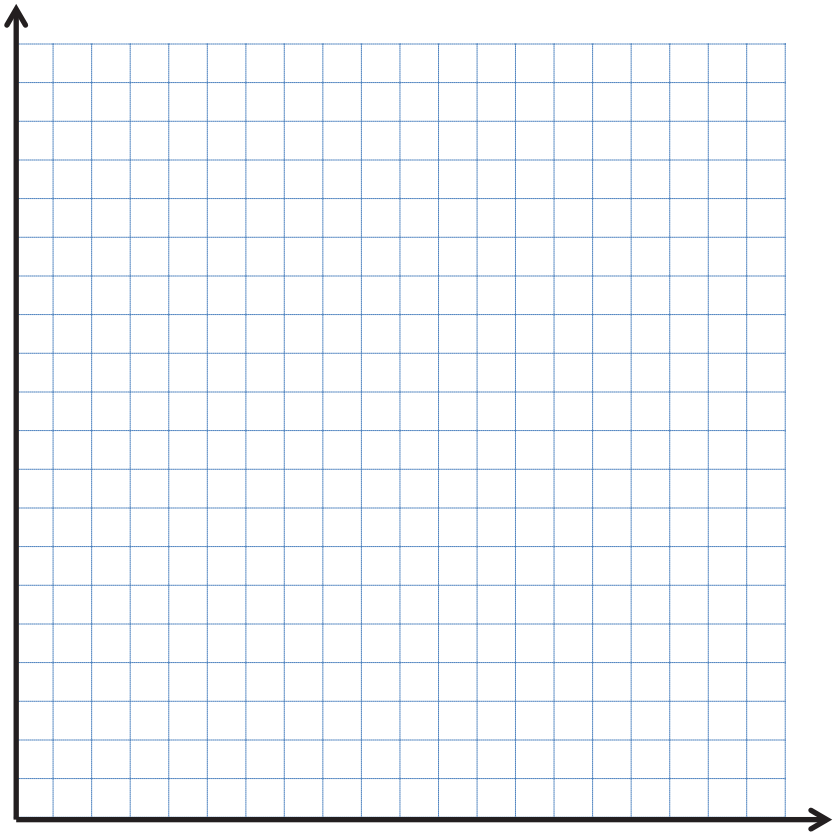
c. Plot a triangle at (3, 4).

d. Plot a square at $(4\frac{3}{4}, 5)$.

e. Plot an X at $(\frac{1}{2}, \frac{3}{4})$.

4. The pirate's treasure is buried at the ✖ on the map. How could a coordinate plane make describing its location easier?

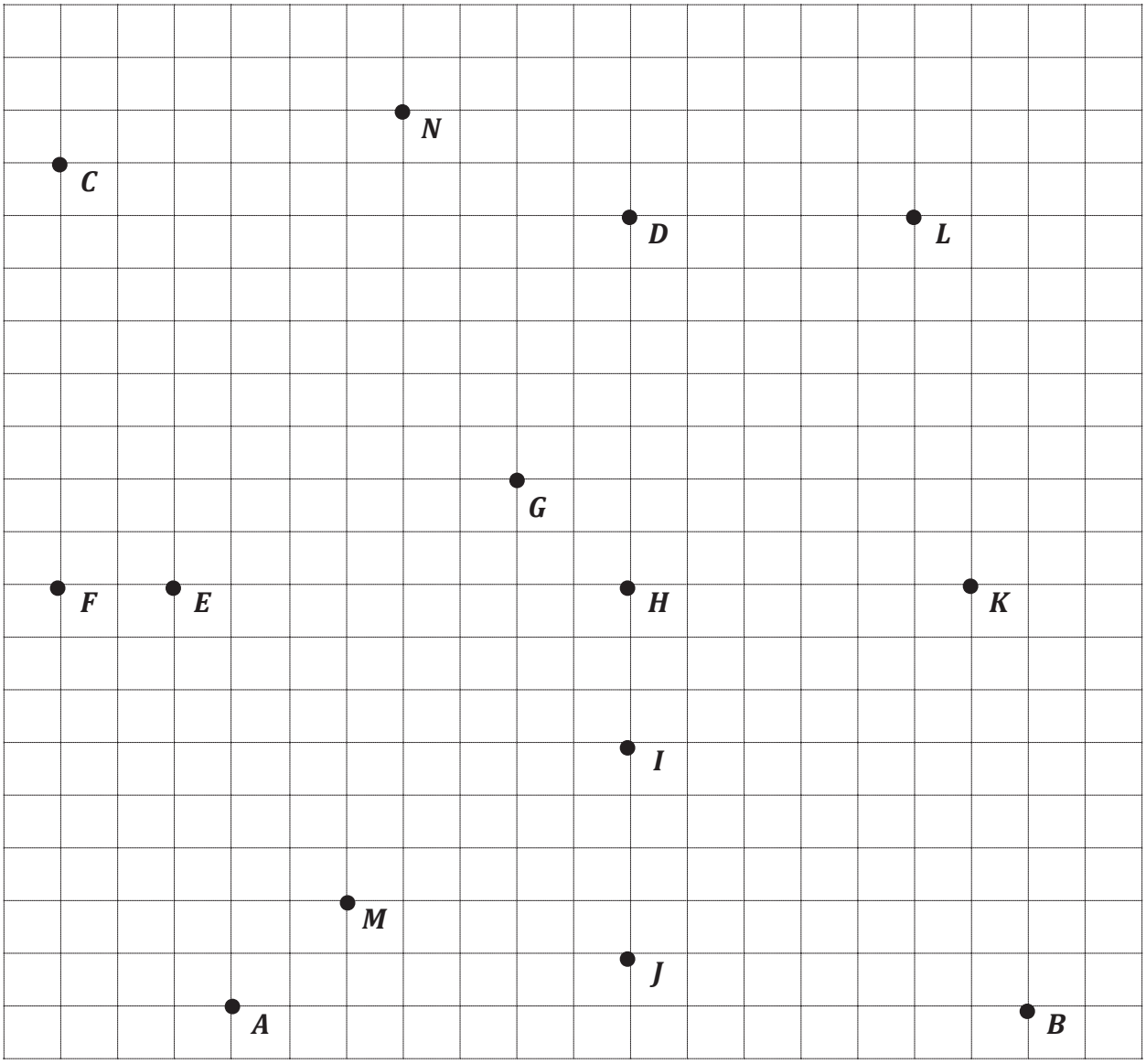




coordinate plane

Name _____ Date _____

1. Use the grid below to complete the following tasks.
   a. Construct an x-axis that passes through points A and B.
   b. Construct a perpendicular y-axis that passes through points C and F.
   c. Label the origin as 0.
   d. The x-coordinate of B is $5\frac{2}{3}$. Label the whole numbers along the x-axis.
   e. The y-coordinate of C is $5\frac{1}{3}$. Label the whole numbers along the y-axis.



2. For all of the following problems, consider the points A through N on the previous page.

   a. Identify all of the points that have an x-coordinate of $3\frac{1}{3}$.

   b. Identify all of the points that have a y-coordinate of $2\frac{2}{3}$.

   c. Which point is $3\frac{1}{3}$ units above the x-axis ***and*** $2\frac{2}{3}$ units to the right of the y-axis? Name the point and give its coordinate pair.

   d. Which point is located $5\frac{1}{3}$ units from the y-axis?

   e. Which point is located $1\frac{2}{3}$ units along the x-axis?

   f. Give the coordinate pair for each of the following points.

   K: _____ I: _____ B: _____ C: _____

   g. Name the points located at the following coordinates.

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

   h. Which point has an equal x- and y-coordinate? _____

   i. Give the coordinates for the intersection of the two axes. (____ , ____) Another name for this point on the plane is the _____.

   j. Plot the following points.

   P: $(4\frac{1}{3}, 4)$ Q: $(\frac{1}{3}, 6)$ R: $(4\frac{2}{3}, 1)$ S: $(0, 1\frac{2}{3})$

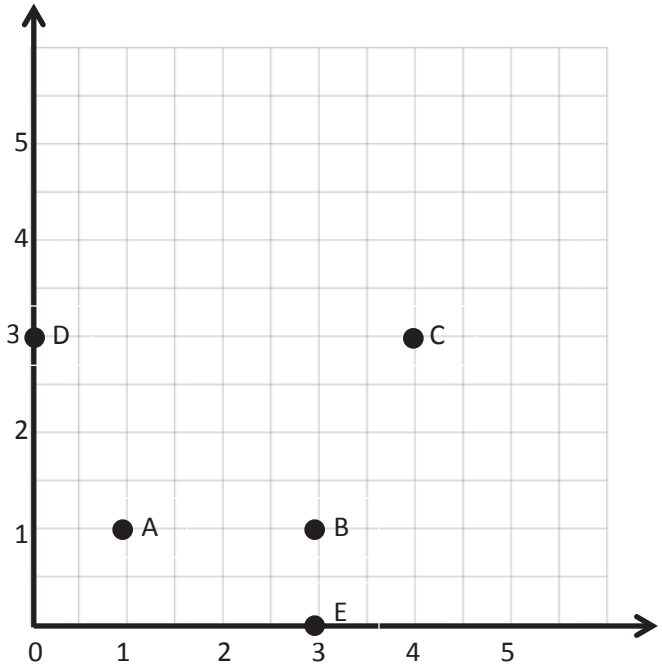
   k. What is the distance between E and H, or EH?

   l. What is the length of HD?

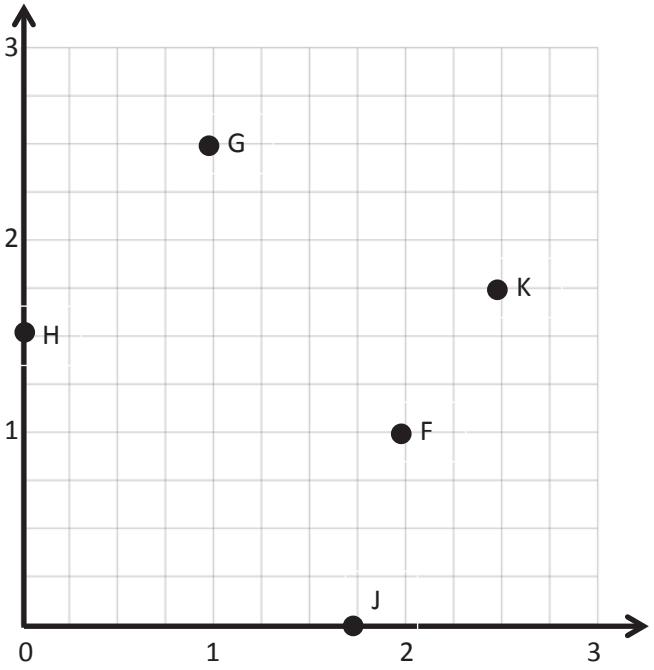
   m. Would the length of ED be greater or less than $EH + HD$?

   n. Jack was absent when the teacher explained how to describe the location of a point on the coordinate plane. Explain it to him using point J.

a.

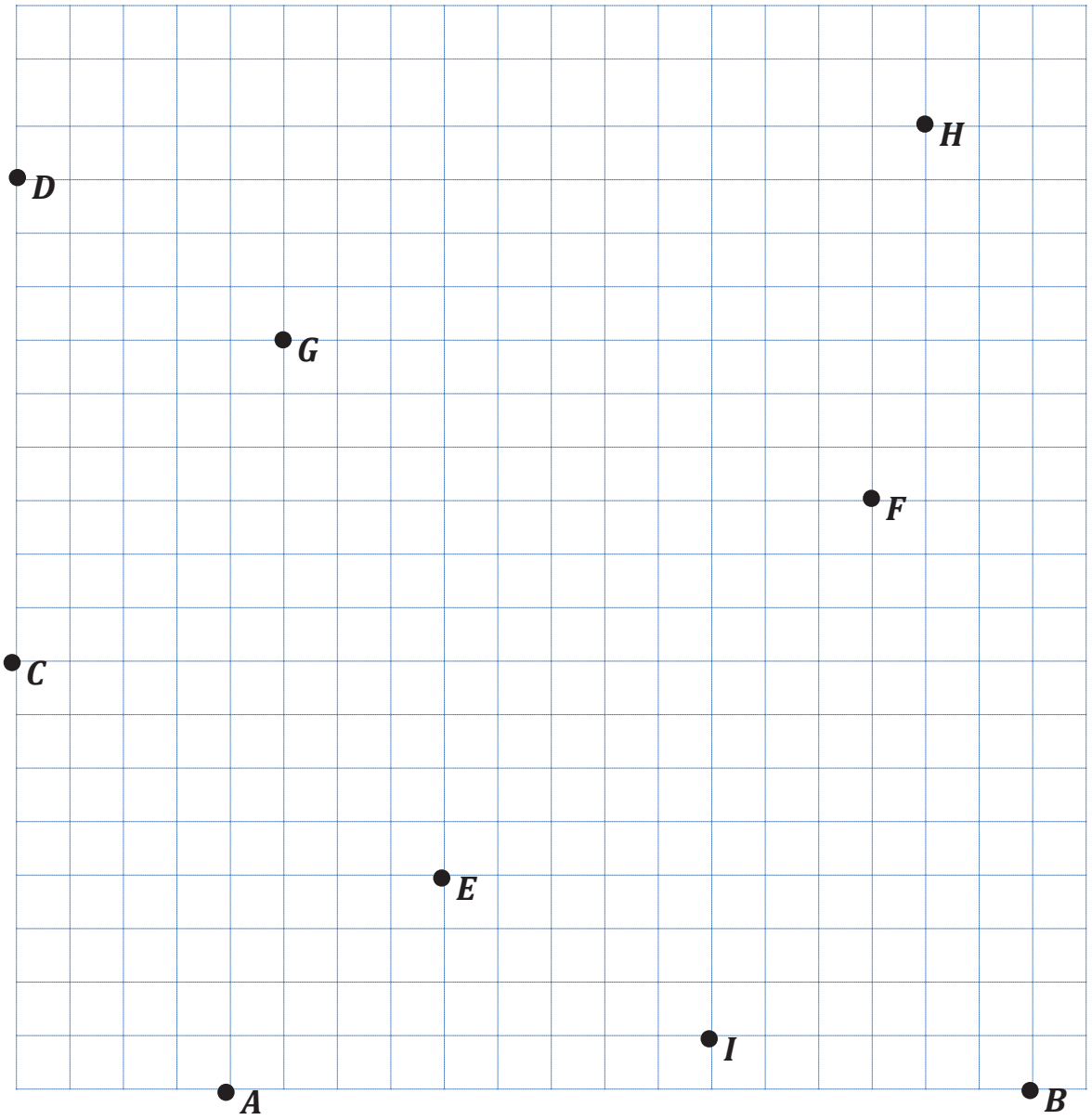


b.



_____

coordinate grid



unlabeled coordinate plane

Battleship Rules

Goal: To sink all of your opponent's ships by correctly guessing their coordinates.

Materials

- 1 grid sheet (per person/per game)
- Red crayon/marker for hits
- Black crayon/marker for misses
- Folder to place between players

Ships

- Each player must mark 5 ships on the grid.
  - Aircraft Carrier – Plot 5 points
  - Battleship – Plot 4 points
  - Cruiser – Plot 3 points
  - Submarine – Plot 3 points
  - Patrol Boat – Plot 2 points

Setup

- With your opponent, choose a unit length and fractional unit for the coordinate plane.
- Label chosen units on both grid sheets.
- Secretly select locations for each of the 5 ships on your My Ships grid.
  - All ships must be placed horizontally or vertically on the coordinate plane.
  - Ships can touch each other, but they may not occupy the same coordinate.

Play

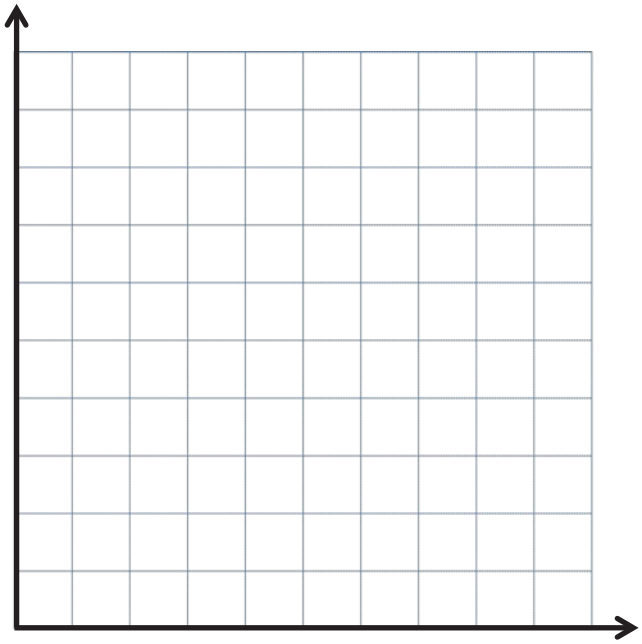
- Players take turns firing one shot to attack enemy ships.
- On your turn, call out the coordinates of your attacking shot. Record the coordinates of each attack shot.
- Your opponent checks his My Ships grid. If that coordinate is unoccupied, he says, "Miss." If you named a coordinate occupied by a ship, he says, "Hit."
- Mark each attempted shot on your Enemy Ships grid. Mark a black ✖on the coordinate if your opponent says, "Miss." Mark a red ✓on the coordinate if your opponent says, "Hit."
- On your opponent's turn, if he hits one of your ships, mark a red ✓on that coordinate of your My Ships grid. When one of your ships has every coordinate marked with a ✓, say, "You've sunk my [name of ship]."

Victory

- The first player to sink all (or the most) opposing ships, wins.

My Ships

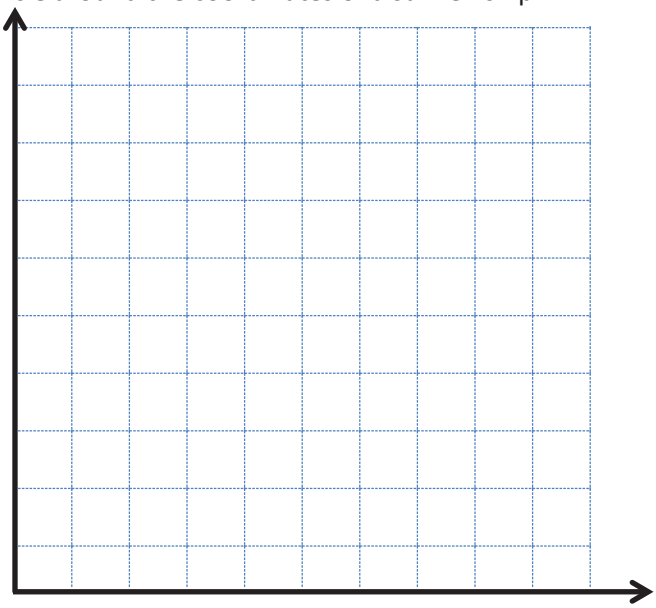
- Draw a red ✓over any coordinate your opponent hits.
- Once all of the coordinates of any ship have been hit, say, "You've sunk my [name of ship]."



aircraft carrier – 5 points
battleship – 4 points
cruiser – 3 points
submarine – 3 points
patrol boat – 2 points

Enemy Ships

- Draw a black ✖ on the coordinate if your opponent says, "Miss."
- Draw a red ✓ on the coordinate if your opponent says, "Hit."
- Draw a circle around the coordinates of a sunken ship.



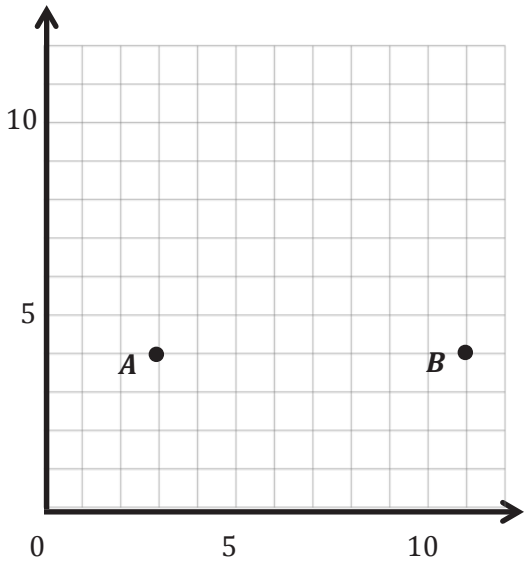
Attack Shots

- Record the coordinates of each shot below and whether it was a ✓ (hit) or a ✖ (miss).

(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)
(_____ , _____) (_____ , _____)

Name _____ Date _____

1. Use the coordinate plane to the right to answer the following questions.



   a. Use a straightedge to construct a line that goes through points A and B. Label the line $\boldsymbol{e}$.
   b. Line $\boldsymbol{e}$ is parallel to the _____-axis and is perpendicular to the _____-axis.
   c. Plot two more points on line $\boldsymbol{e}$. Name them C and D.
   d. Give the coordinates of each point below.

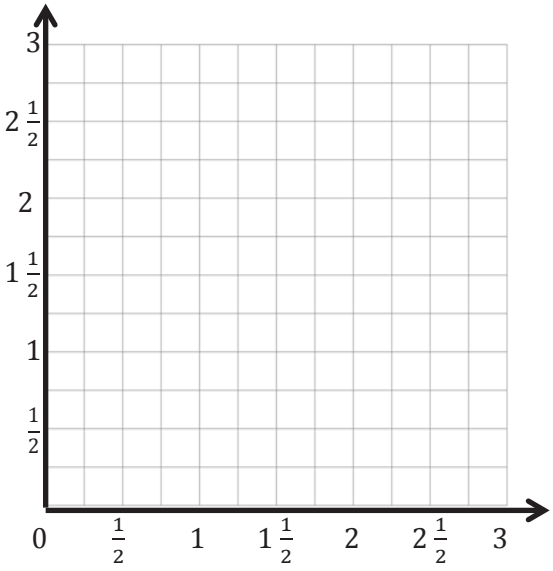
      A: _____ B: _____

      C: _____ D: _____

   e. What do all of the points of line $\boldsymbol{e}$ have in common?

   f. Give the coordinates of another point that would fall on line $\boldsymbol{e}$ with an x-coordinate greater than 15.

2. Plot the following points on the coordinate plane to the right.



   P: $(1\frac{1}{2}, \frac{1}{2})$ Q: $(1\frac{1}{2}, 2\frac{1}{2})$

   R: $(1\frac{1}{2}, 1\frac{1}{4})$ S: $(1\frac{1}{2}, \frac{3}{4})$

   a. Use a straightedge to draw a line to connect these points. Label the line $\boldsymbol{h}$.
   b. In line $\boldsymbol{h}$, x = _____ for all values of y.
   c. Circle the correct word.

      Line $\boldsymbol{h}$ is *parallel* *perpendicular* to the x-axis.

      Line $\boldsymbol{h}$ is *parallel* *perpendicular* to the y-axis.

   d. What pattern occurs in the coordinate pairs that let you know that line $\boldsymbol{h}$ is vertical?

3. For each pair of points below, think about the line that joins them. For which pairs is the line parallel to the x-axis? Circle your answer(s). Without plotting them, explain how you know.

   a. (1.4, 2.2) and (4.1, 2.4) b. (3, 9) and (8, 9) c. $(1\frac{1}{4}, 2)$ and $(1\frac{1}{4}, 8)$

4. For each pair of points below, think about the line that joins them. For which pairs is the line parallel to the y-axis? Circle your answer(s). Then, give 2 other coordinate pairs that would also fall on this line.

   a. (4, 12) and (6, 12) b. $(\frac{3}{5}, 2\frac{3}{5})$ and $(\frac{1}{5}, 3\frac{1}{5})$ c. (0.8, 1.9) and (0.8, 2.3)

5. Write the coordinate pairs of 3 points that can be connected to construct a line that is $5\frac{1}{2}$ units to the right of and parallel to the y-axis.

   a. _____ b. _____ c. _____

6. Write the coordinate pairs of 3 points that lie on the x-axis.

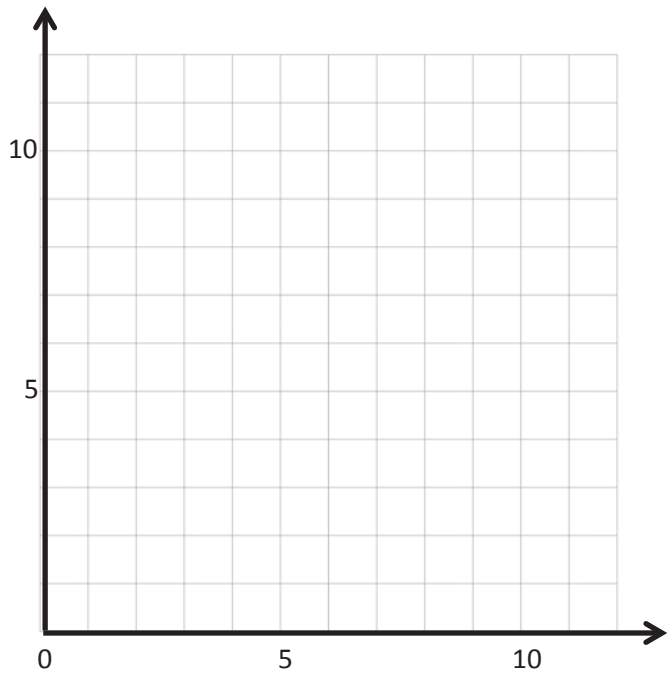
   a. _____ b. _____ c. _____

7. Adam and Janice are playing *Battleship.* Presented in the table is a record of Adam's guesses so far.
   He has hit Janice's battleship using these coordinate pairs. What should he guess next? How do you know? Explain, using words and pictures.

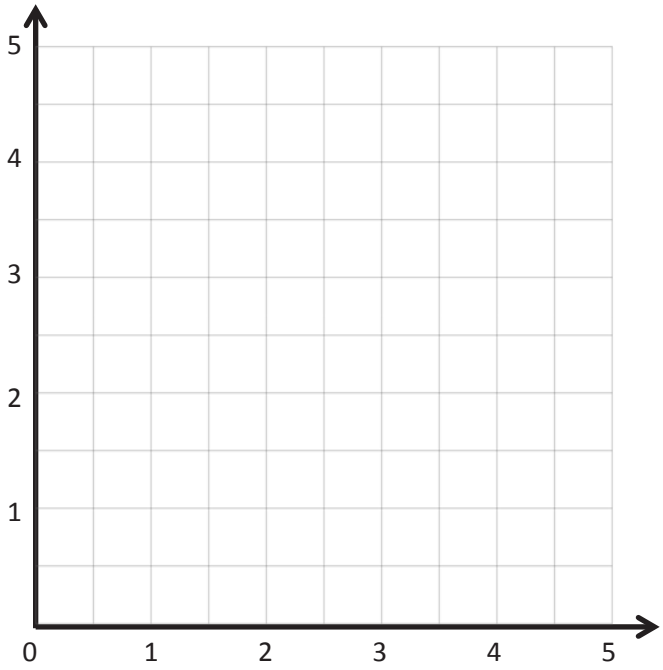
(3, 11)	hit
(2, 11)	miss
(3, 10)	hit
(4, 11)	miss
(3, 9)	miss

Point	x	y	(x, y)
H			
I			
J			
K			
L			

a.



b.



Point	x	y	(x, y)
D	$2\frac{1}{2}$	0	$(2\frac{1}{2}, 0)$
E	$2\frac{1}{2}$	2	$(2\frac{1}{2}, 2)$
F	$2\frac{1}{2}$	4	$(2\frac{1}{2}, 4)$

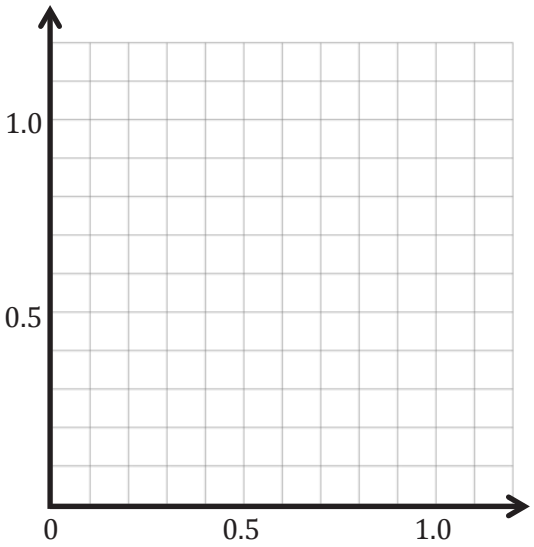
coordinate plane practice

Name _____ Date _____

1. Plot the following points, and label them on the coordinate plane.

   A: (0.3, 0.1) B: (0.3, 0.7)

   C: (0.2, 0.9) D: (0.4, 0.9)



   a. Use a straightedge to construct line segments $\overline{AB}$ and $\overline{CD}$.

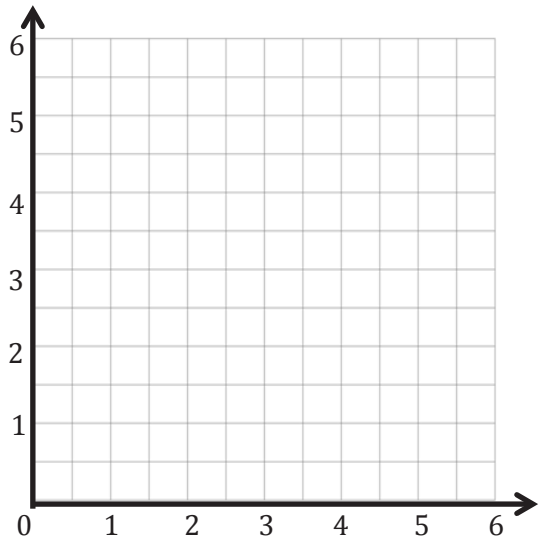
   b. Line segment _____ is parallel to the x-axis and is perpendicular to the y-axis.

   c. Line segment _____ is parallel to the y-axis and is perpendicular to the x-axis.

   d. Plot a point on line segment $\overline{AB}$ that is not at the endpoints, and name it U. Write the coordinates. U (_____ , _____)

   e. Plot a point on line segment $\overline{CD}$ and name it V. Write the coordinates. V (_____ , _____)

2. Construct line $\boldsymbol{f}$ such that the y-coordinate of every point is $3\frac{1}{2}$, and construct line $\boldsymbol{g}$ such that the x-coordinate of every point is $4\frac{1}{2}$.



   a. Line $\boldsymbol{f}$ is _____ units from the x-axis.

   b. Give the coordinates of the point on line $\boldsymbol{f}$ that is $\frac{1}{2}$ unit from the y-axis. _____

   c. With a blue pencil, shade the portion of the grid that is less than $3\frac{1}{2}$ units from the x-axis.

   d. Line $\boldsymbol{g}$ is _____ units from the y-axis.

   e. Give the coordinates of the point on line $\boldsymbol{g}$ that is 5 units from the x-axis. _____

   f. With a red pencil, shade the portion of the grid that is more than $4\frac{1}{2}$ units from the y-axis.

3. Complete the following tasks on the plane below.

   a. Construct a line $\boldsymbol{m}$ that is perpendicular to the x-axis and 3.2 units from the y-axis.

   b. Construct a line $\boldsymbol{a}$ that is 0.8 units from the x-axis.

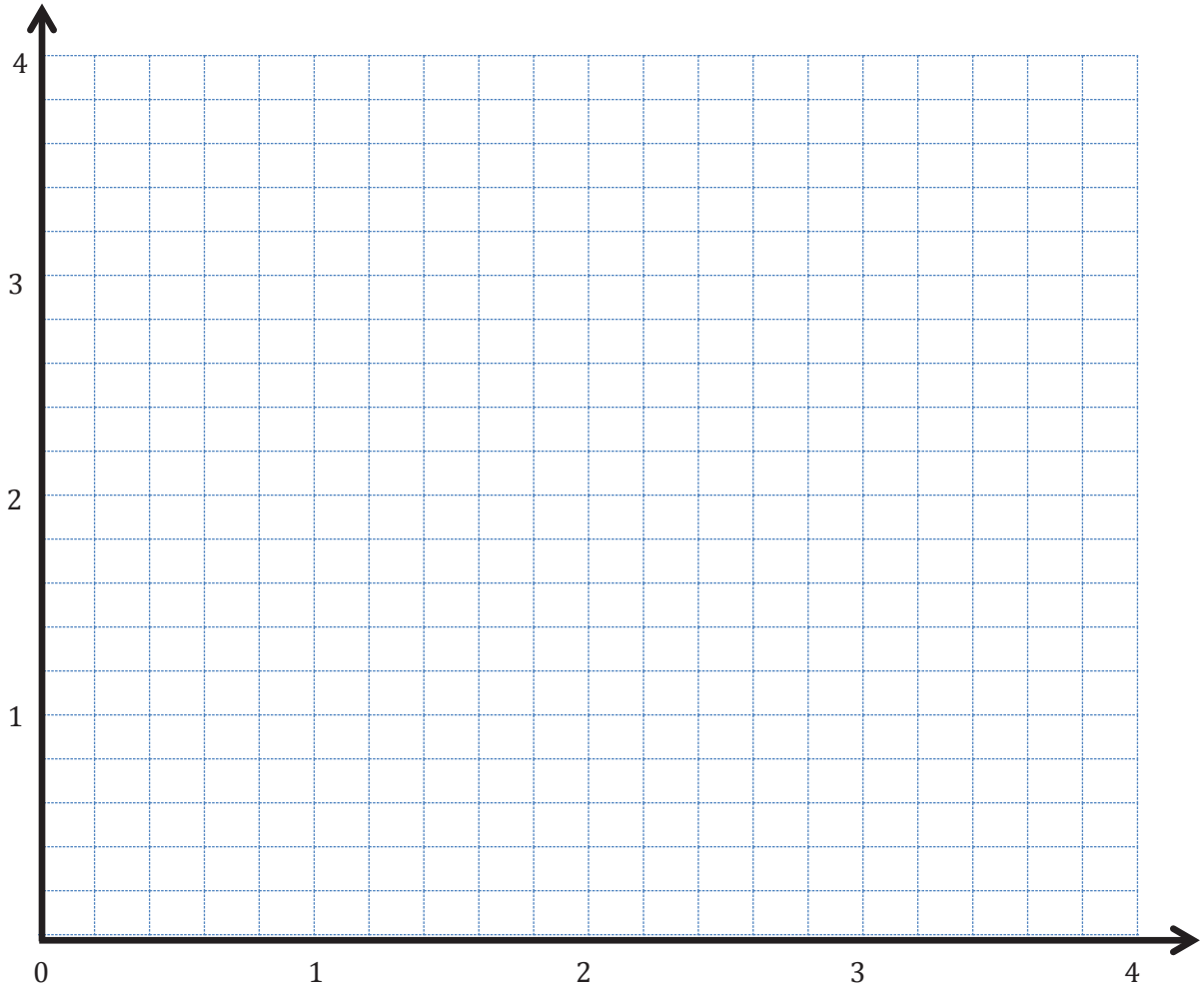
   c. Construct a line $\boldsymbol{t}$ that is parallel to line $\boldsymbol{m}$ and is halfway between line $\boldsymbol{m}$ and the y-axis.

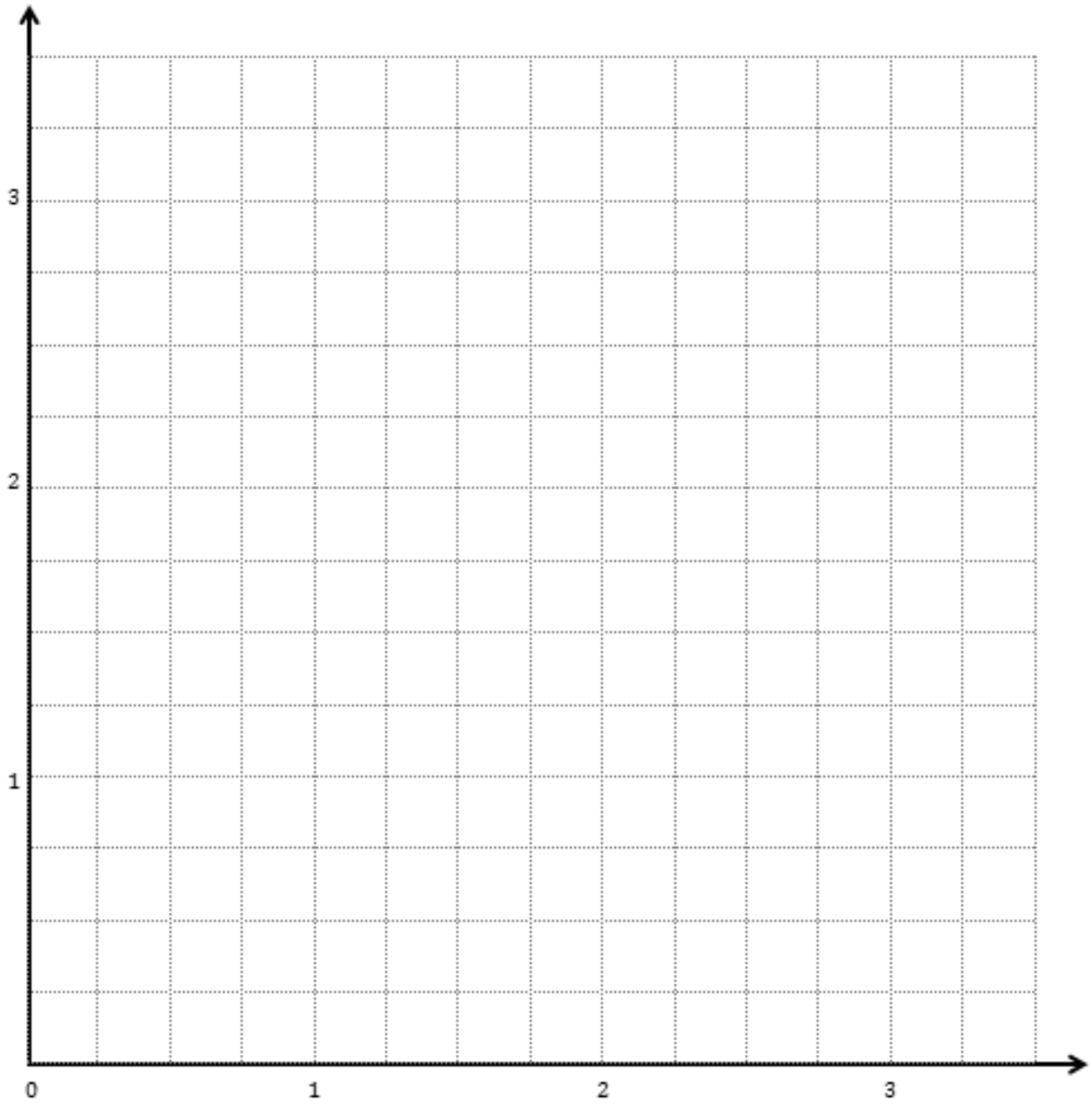
   d. Construct a line $\boldsymbol{h}$ that is perpendicular to line $\boldsymbol{t}$ and passes through the point (1.2, 2.4).

   e. Using a blue pencil, shade the region that contains points that are more than 1.6 units and less than 3.2 units from the y-axis.

   f. Using a red pencil, shade the region that contains points that are more than 0.8 units and less than 2.4 units from the x-axis.

   g. Give the coordinates of a point that lies in the double-shaded region.





Point	x	y	(x, y)
A			
B			
C			

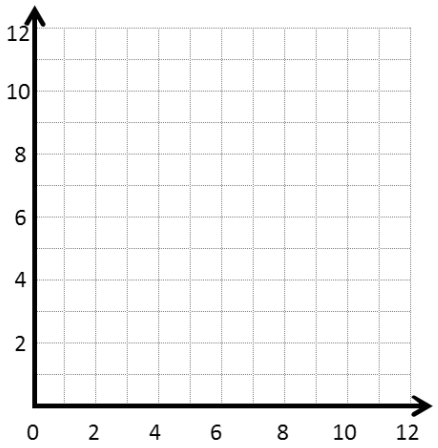
Point	x	y	(x, y)
D			
E			
F			

coordinate plane

Name _____ Date _____

1. Complete the chart. Then, plot the points on the coordinate plane below.

x	y	(x, y)
0	1	(0, 1)
2	3	
4	5	
6	7	



a. Use a straightedge to draw a line connecting these points.

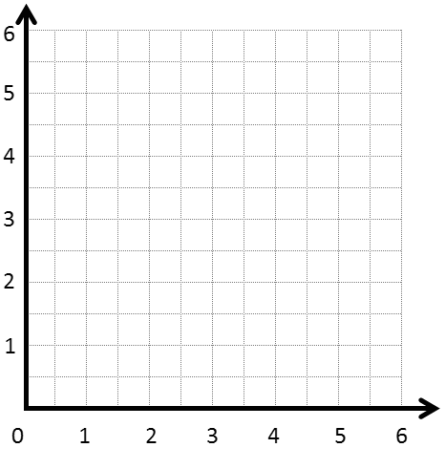
b. Write a rule showing the relationship between the x- and y-coordinates of points on the line.

c. Name 2 other points that are on this line.

_____ _____

2. Complete the chart. Then, plot the points on the coordinate plane below.

x	y	(x, y)
$\frac{1}{2}$	1	
1	2	
$1\frac{1}{2}$	3	
2	4	

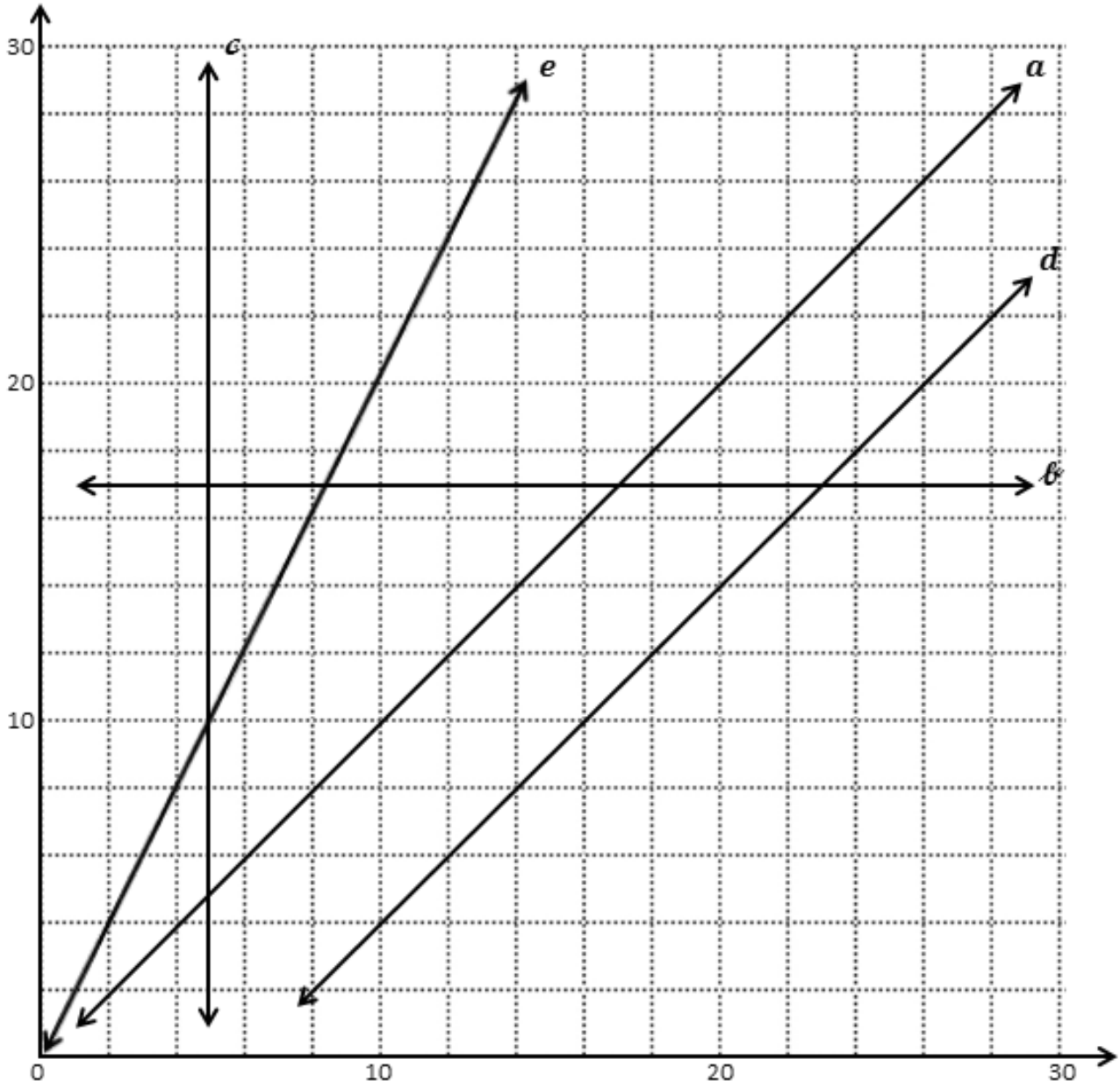


a. Use a straightedge to draw a line connecting these points.

b. Write a rule showing the relationship between the x- and y-coordinates.

c. Name 2 other points that are on this line. _____ _____

3. Use the coordinate plane below to answer the following questions.



a. Give the coordinates for 3 points that are on line $\boldsymbol{a}$. _____ _____ _____

b. Write a rule that describes the relationship between the x- and y-coordinates for the points on line $\boldsymbol{a}$.

c. What do you notice about the y-coordinates of every point on line $\boldsymbol{b}$?

d. Fill in the missing coordinates for points on line $\boldsymbol{d}$.

(12, _____) (6, _____) (_____, 24) (36, _____) (_____, 30)

e. For any point on line $\boldsymbol{c}$, the x-coordinate is _____.

f. Each of the points lies on at least 1 of the lines shown in the plane above. Identify a line that contains each of the following points.

i. (7, 7) ___$\boldsymbol{a}$___ ii. (14, 8) _____ iii. (5, 10) _____

iv. (0, 17) _____ v. (15.3, 9.3) _____ vi. (20, 40) _____

Name _____ Date _____

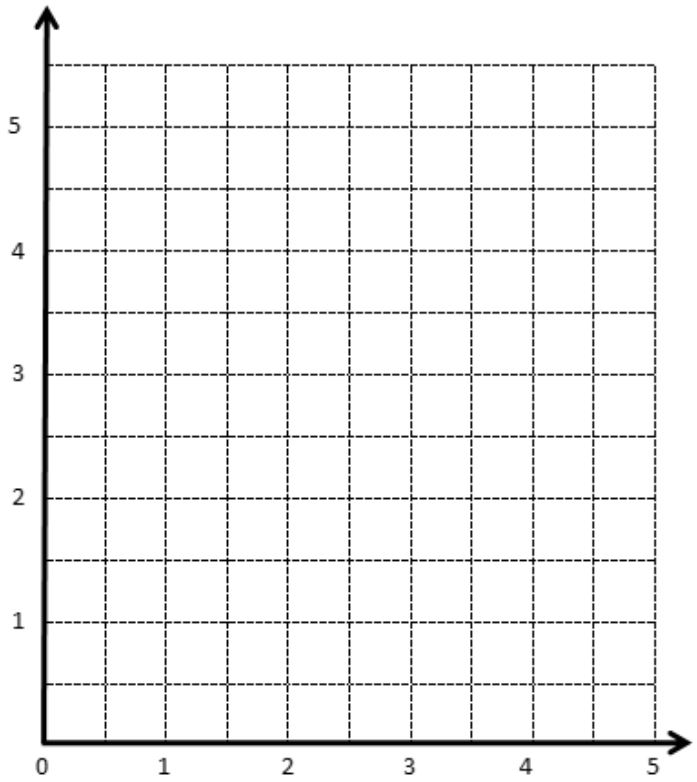
1.

a.

Point	x	y	(x, y)
A	0	0	(0, 0)
B	1	1	(1, 1)
C	2	2	(2, 2)
D	3	3	(3, 3)

b.

Point	x	y	(x, y)
G	0	3	(0, 3)
H	$\frac{1}{2}$	$3\frac{1}{2}$	$(\frac{1}{2}, 3\frac{1}{2})$
I	1	4	(1, 4)
J	$1\frac{1}{2}$	$4\frac{1}{2}$	$(1\frac{1}{2}, 4\frac{1}{2})$



_____

coordinate plane

2.

a.

Point	(x, y)
L	(0, 3)
M	(2, 3)
N	(4, 3)

b.

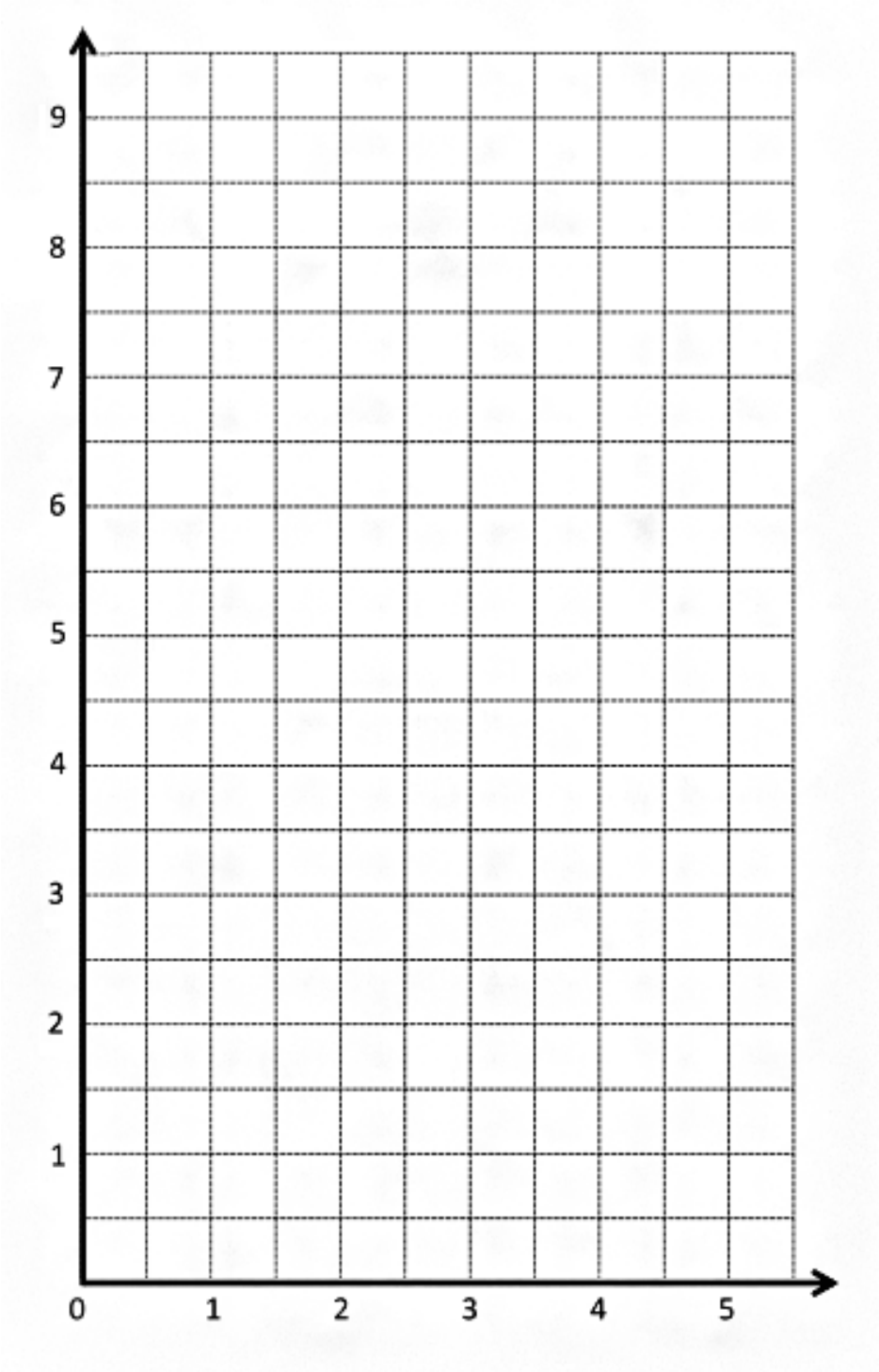
Point	(x, y)
O	(0, 0)
P	(1, 2)
Q	(2, 4)

c.

Point	(x, y)
R	$(1, \frac{1}{2})$
S	$(2, 1\frac{1}{2})$
T	$(3, 2\frac{1}{2})$

d.

Point	(x, y)
U	(1, 3)
V	(2, 6)
W	(3, 9)

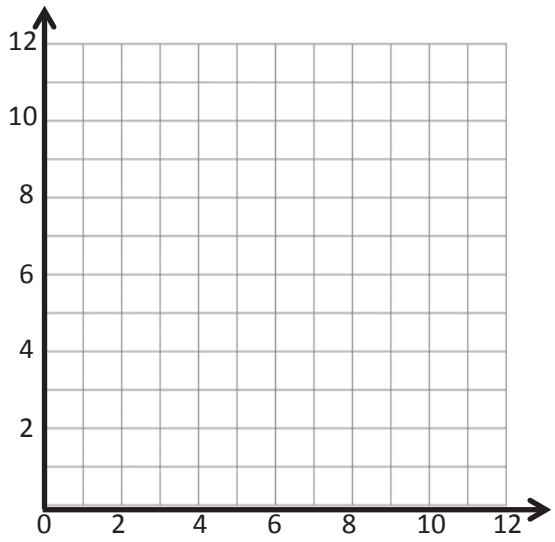


coordinate plane

Name _____ Date _____

1. Create a table of 3 values for x and y such that each y-coordinate is 3 more than the corresponding x-coordinate.

x	y	(x, y)



a. Plot each point on the coordinate plane.

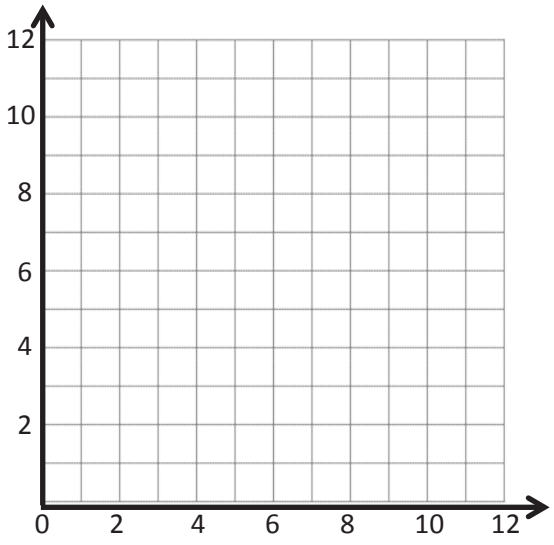
b. Use a straightedge to draw a line connecting these points.

c. Give the coordinates of 2 other points that fall on this line with x-coordinates greater than 12.

(_____ , _____) and (_____ , _____)

2. Create a table of 3 values for x and y such that each y-coordinate is 3 times as much as its corresponding x-coordinate.

x	y	(x, y)



a. Plot each point on the coordinate plane.

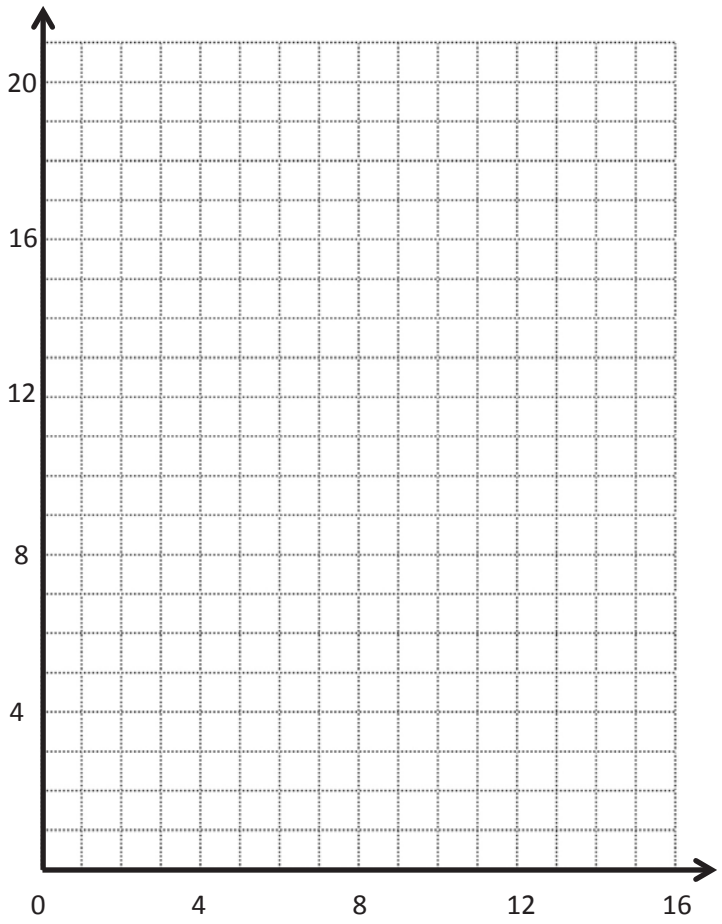
b. Use a straightedge to draw a line connecting these points.

c. Give the coordinates of 2 other points that fall on this line with y-coordinates greater than 25.

(_____ , _____) and (_____ , _____)

3. Create a table of 5 values for x and y such that each y-coordinate is 1 more than 3 times as much as its corresponding x value.

x	y	(x, y)



a. Plot each point on the coordinate plane.

b. Use a straightedge to draw a line connecting these points.

c. Give the coordinates of 2 other points that would fall on this line whose x-coordinates are greater than 12.

(_____ , _____) and (_____, _____)

4. Use the coordinate plane below to complete the following tasks.

   a. Graph the lines on the plane.

   line ℓ: x is equal to y

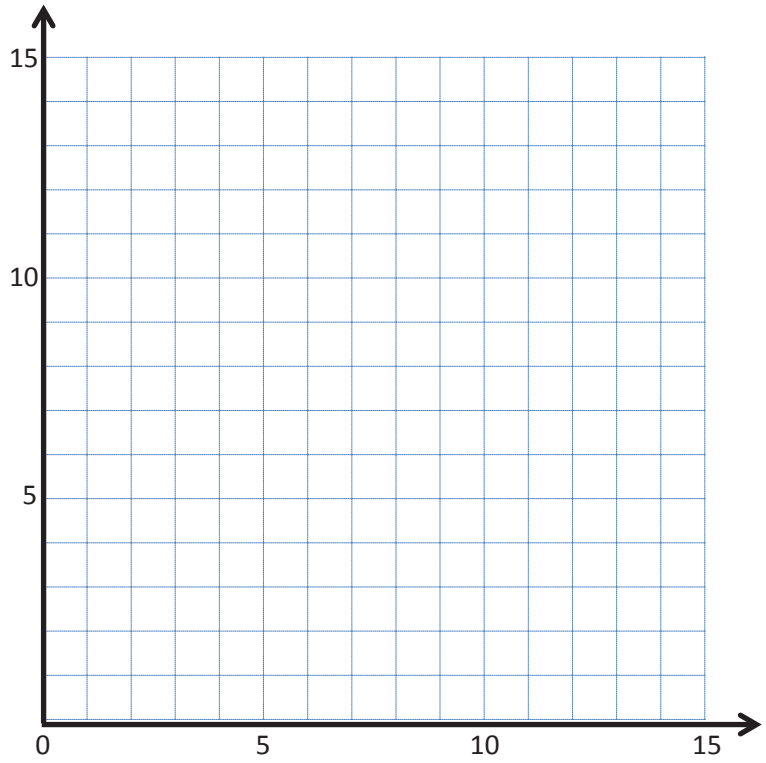
	x	y	(x, y)
A			
B			
C			

   line m: y is 1 more than x

	x	y	(x, y)
G			
H			
I			

   line n: y is 1 more than twice x

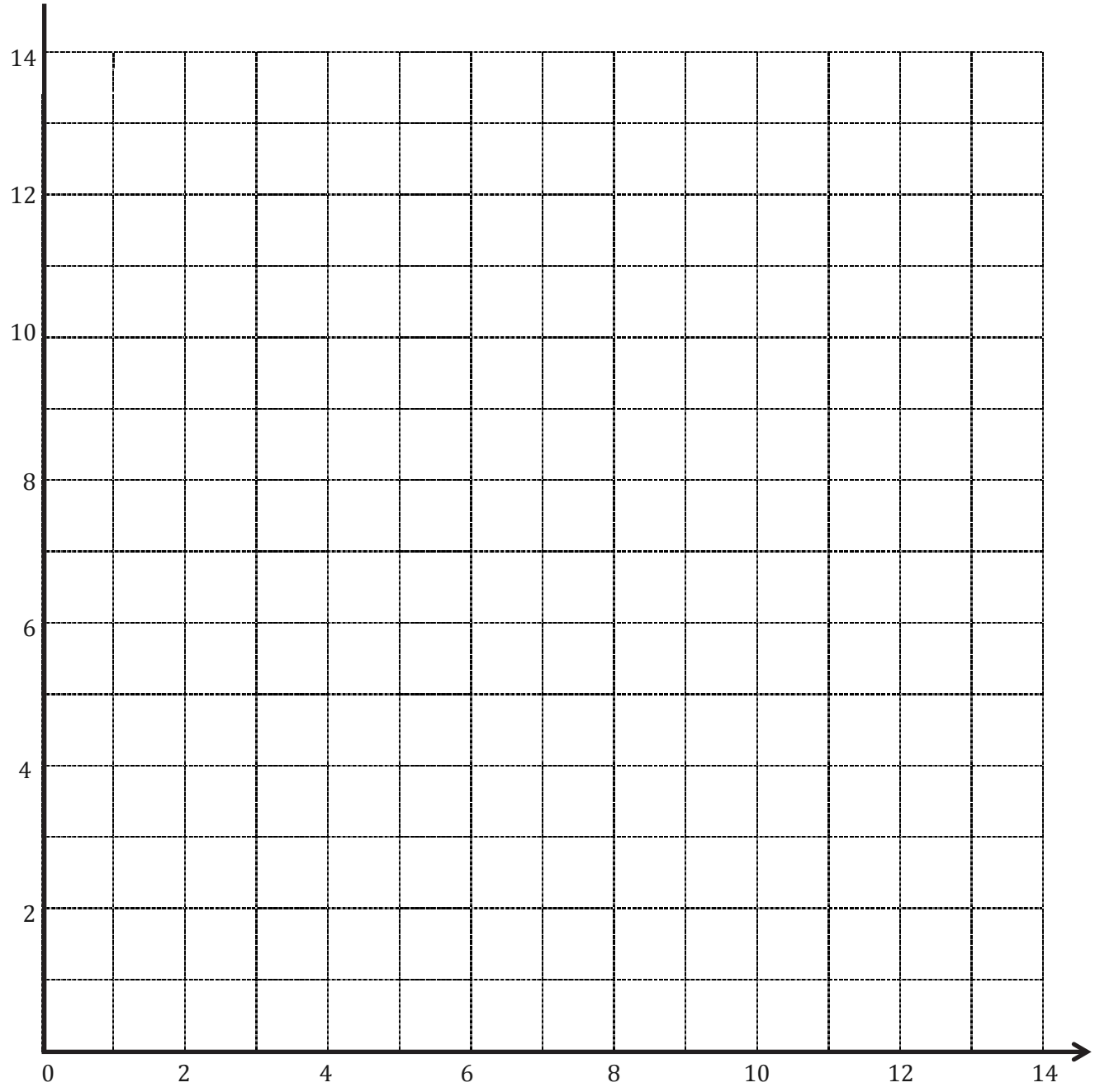
	x	y	(x, y)
S			
T			
U			



   b. Which two lines intersect? Give the coordinates of their intersection.

   c. Which two lines are parallel?

   d. Give the rule for another line that would be parallel to the lines you listed in (c).



Line a:		
x	y	(x, y)

Line b:		
x	y	(x, y)

Line c:		
x	y	(x, y)

coordinate plane

Name _____ Date _____

1. Complete the table for the given rules.

Line a

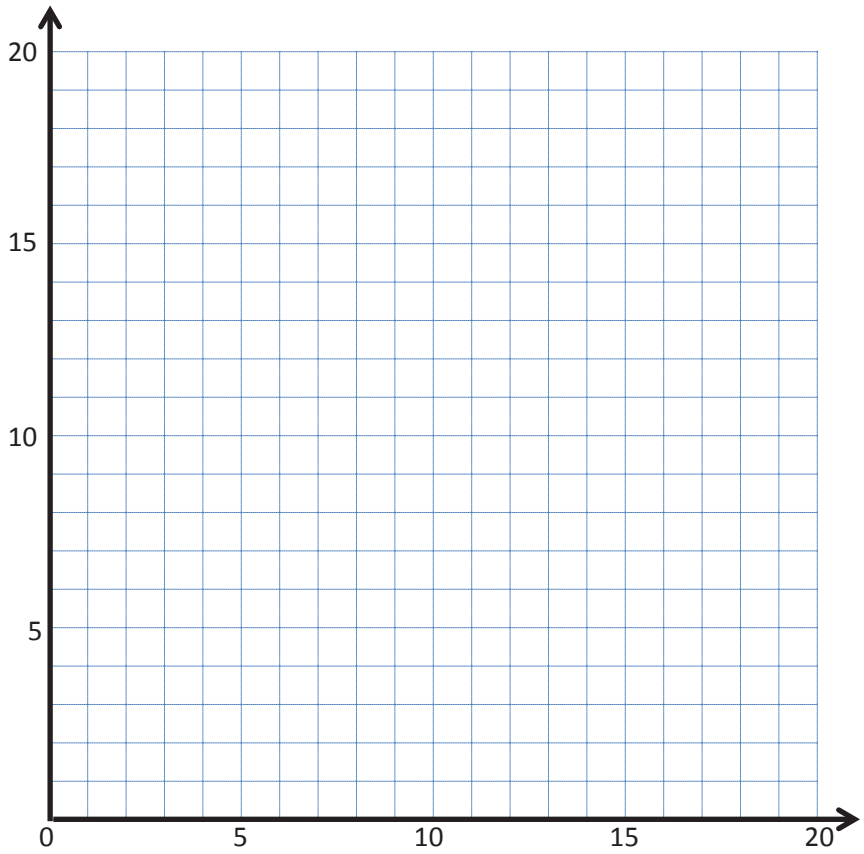
Rule: y is 1 more than x

x	y	(x, y)
1		
5		
9		
13		

Line b

Rule: y is 4 more than x

x	y	(x, y)
0		
5		
8		
11		



a. Construct each line on the coordinate plane above.

b. Compare and contrast these lines.

c. Based on the patterns you see, predict what line c, whose rule is *y is 7 more than x*, would look like. Draw your prediction on the plane above.

2. Complete the table for the given rules.

Line ***e***

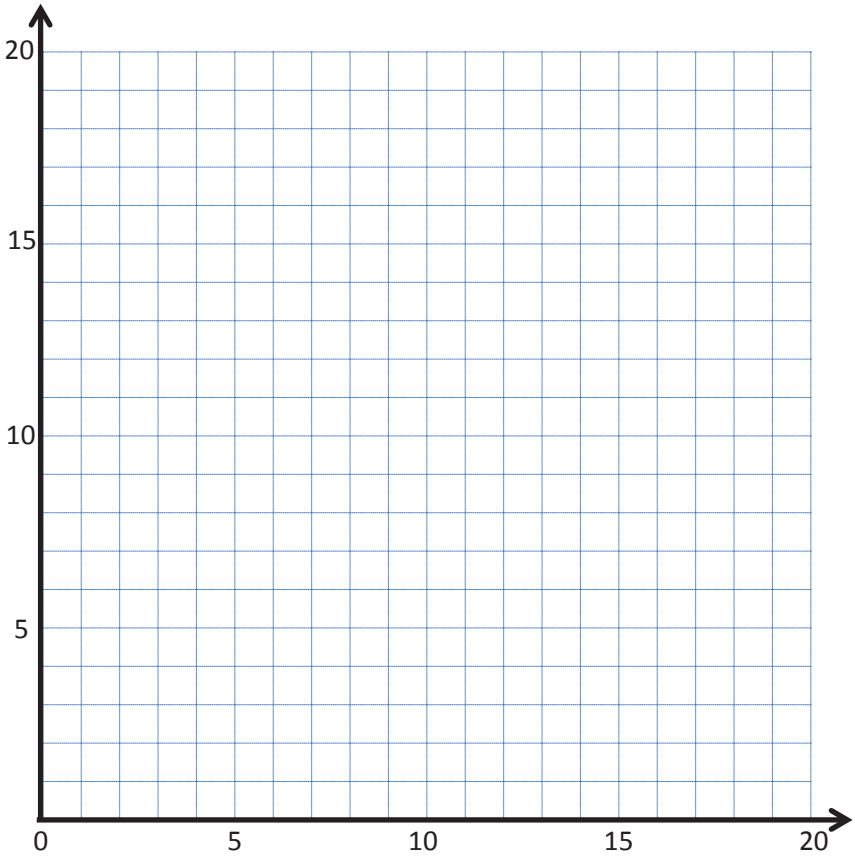
Rule: y is twice as much as x

x	y	(x, y)
0		
2		
5		
9		

Line ***f***

Rule: y is half as much as x

x	y	(x, y)
0		
6		
10		
20		



a. Construct each line on the coordinate plane above.

b. Compare and contrast these lines.

c. Based on the patterns you see, predict what line ***g***, whose rule is *y is 4 times as much as x*, would look like. Draw your prediction in the plane above.

Line ℓ

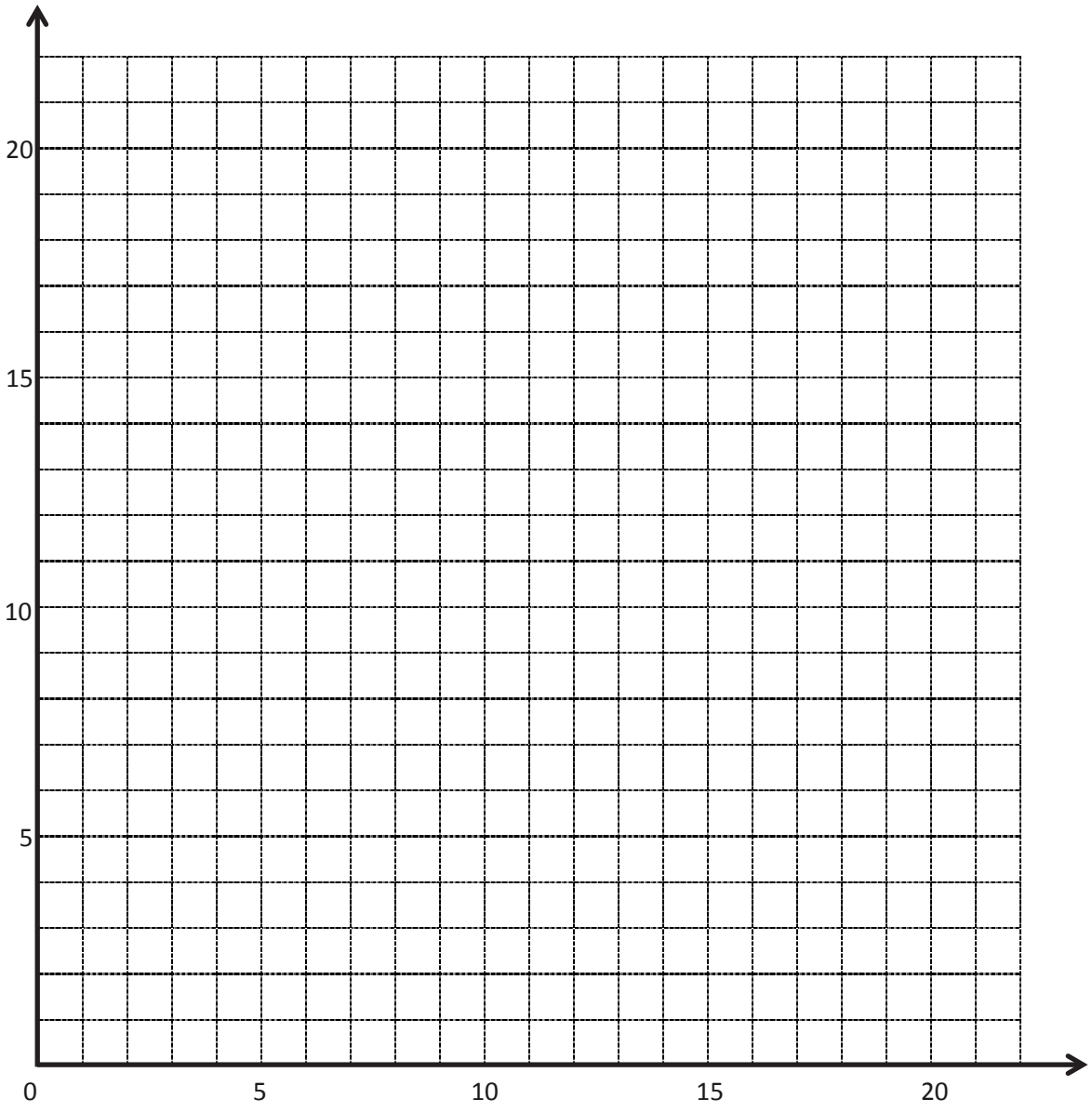
Rule: y is 2 more than x

x	y	(x, y)
1		
5		
10		
15		

Line m

Rule: y is 5 more than x

x	y	(x, y)
0		
5		
10		
15		



coordinate plane

Line p

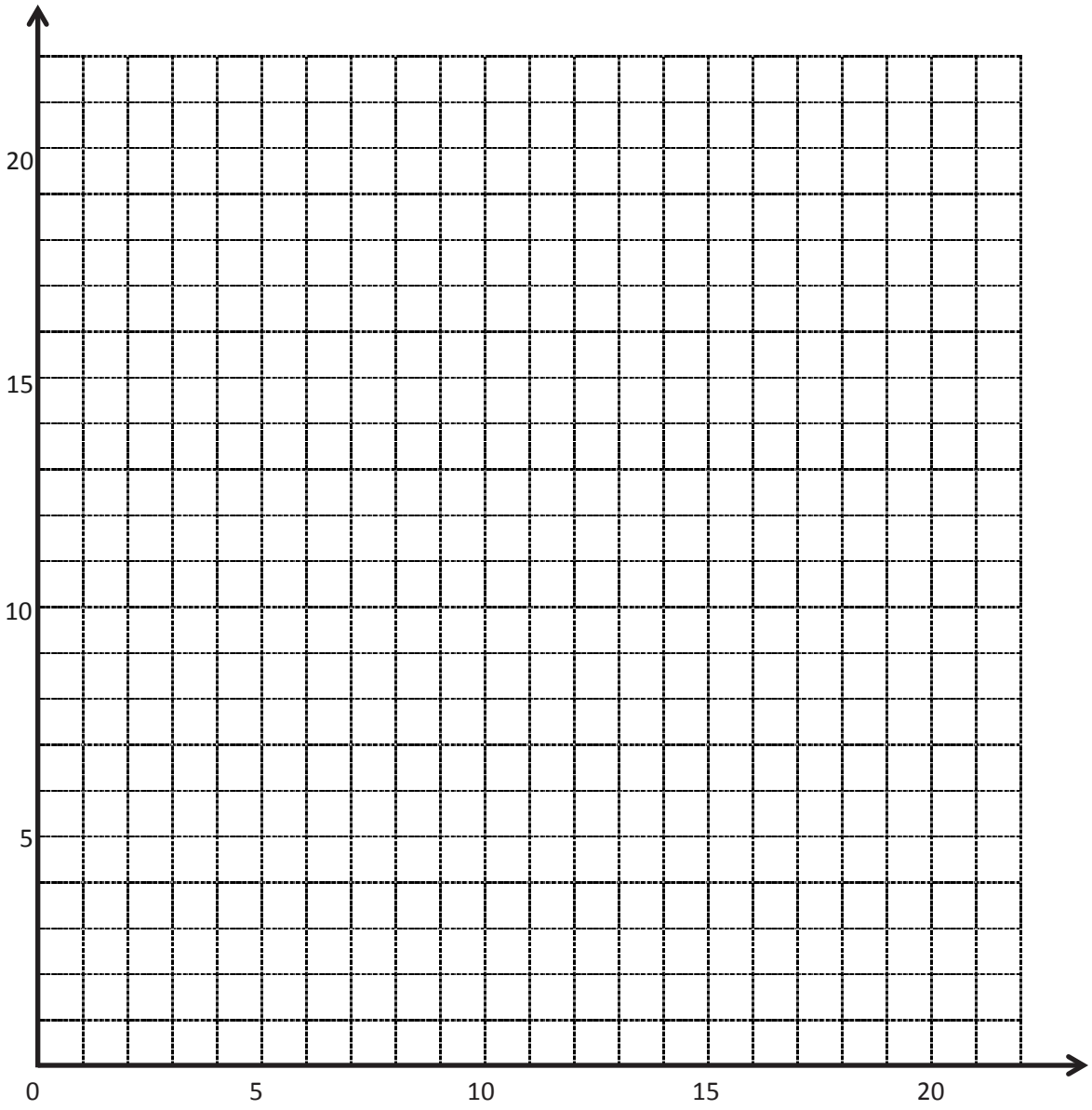
Rule: y is x times 2

x	y	(x, y)

Line q

Rule: y is x times 3

x	y	(x, y)



coordinate plane

Name _____ Date _____

1. Use the coordinate plane below to complete the following tasks.

   a. Line $\boldsymbol{p}$ represents the rule *x and y are equal*.

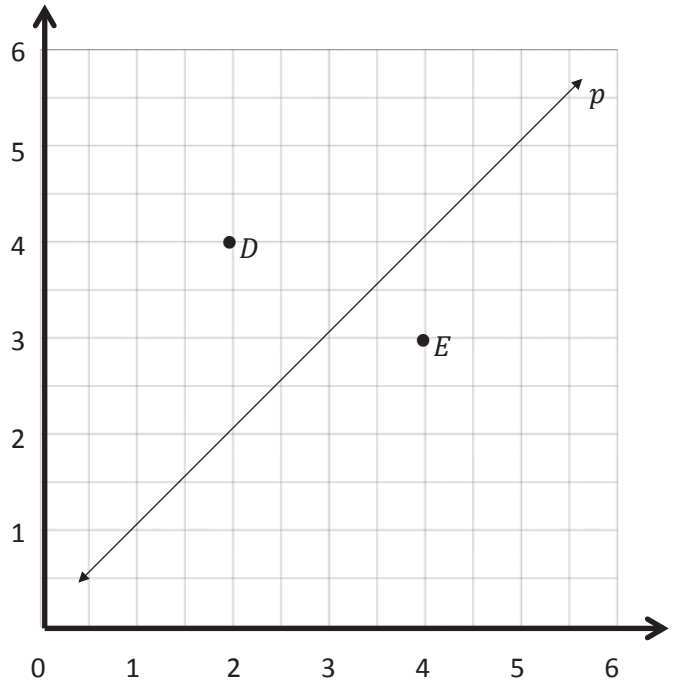
   b. Construct a line, $\boldsymbol{d}$, that is parallel to line $\boldsymbol{p}$ and contains point D.

   c. Name 3 coordinate pairs on line $\boldsymbol{d}$.

   d. Identify a rule to describe line $\boldsymbol{d}$.

   e. Construct a line, $\boldsymbol{e}$, that is parallel to line $\boldsymbol{p}$ and contains point E.

   f. Name 3 points on line $\boldsymbol{e}$.



   g. Identify a rule to describe line $\boldsymbol{e}$.

   h. Compare and contrast lines $\boldsymbol{d}$ and $\boldsymbol{e}$ in terms of their relationship to line $\boldsymbol{p}$.

2. Write a rule for a fourth line that would be parallel to those above and would contain the point $(3\frac{1}{2}, 6)$. Explain how you know.

3. Use the coordinate plane below to complete the following tasks.

   a. Line $\boldsymbol{p}$ represents the rule *x and y are equal*.

   b. Construct a line, $\boldsymbol{v}$, that contains the origin and point V.

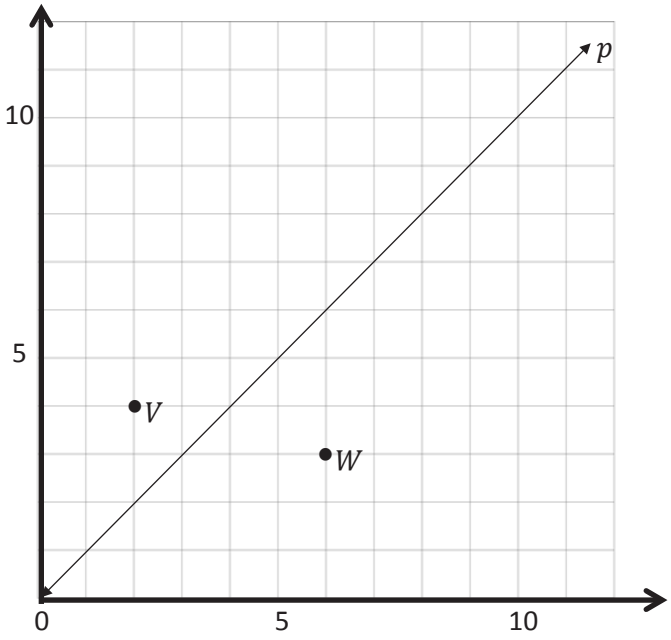
   c. Name 3 points on line $\boldsymbol{v}$.

   d. Identify a rule to describe line $\boldsymbol{v}$.

   e. Construct a line, $\boldsymbol{w}$, that contains the origin and point W.

   f. Name 3 points on line $\boldsymbol{w}$.

   g. Identify a rule to describe line $\boldsymbol{w}$.



   h. Compare and contrast lines $\boldsymbol{v}$ and $\boldsymbol{w}$ in terms of their relationship to line $\boldsymbol{p}$.

   i. What patterns do you see in lines that are generated by multiplication rules?

4. Circle the rules that generate lines that are parallel to each other.

   Add 5 to x *Multiply x by $\frac{2}{3}$* *x plus $\frac{1}{2}$* *x times $1\frac{1}{2}$*

Line p

Rule: y is 0 more than x

x	y	(x, y)
0		
5		
10		
15		

Line b

Rule: _____

x	y	(x, y)
7		
10		
13		
18		

Line c

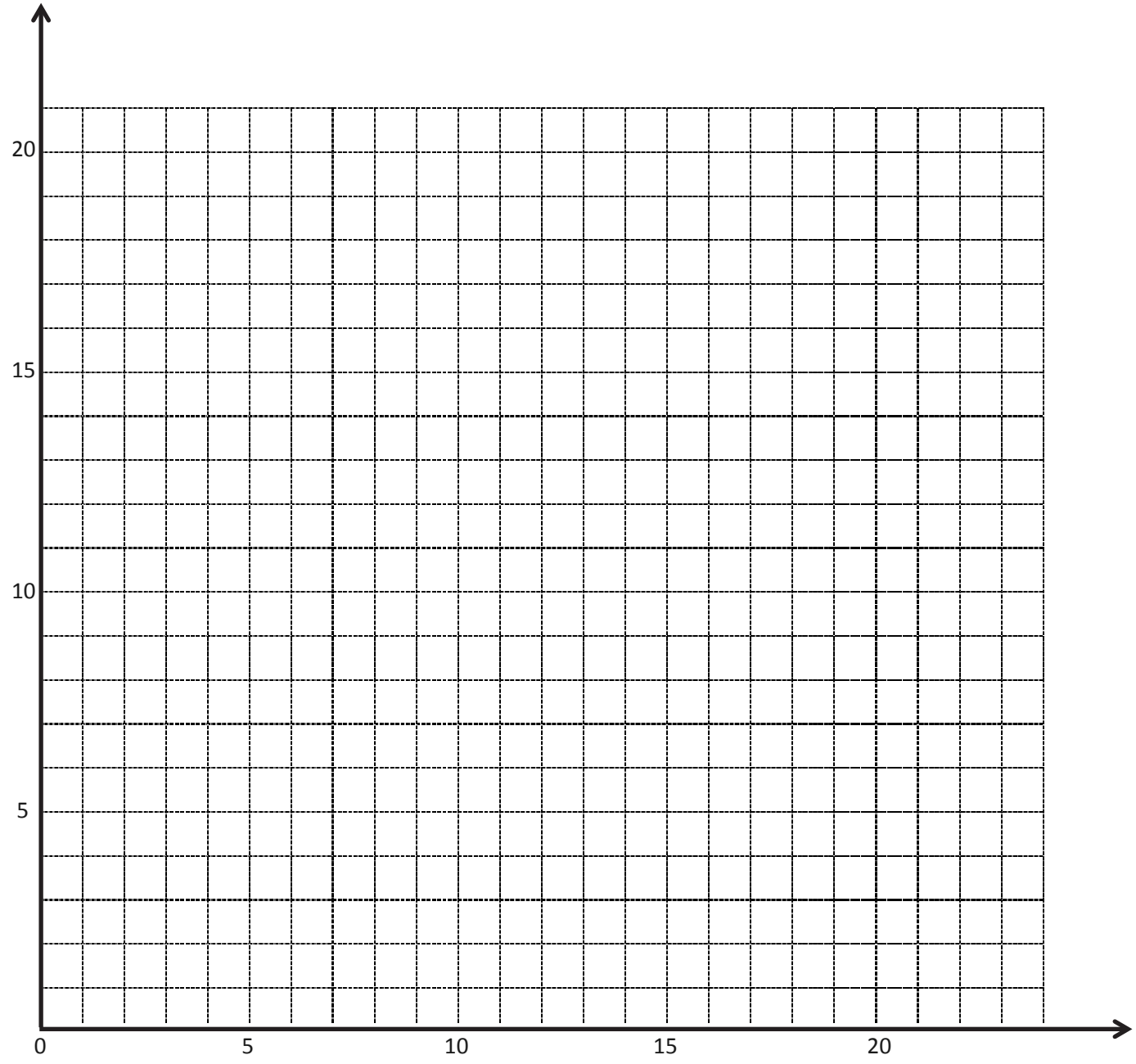
Rule: _____

x	y	(x, y)
2		
4		
8		
11		

Line d

Rule: _____

x	y	(x, y)
5		
7		
12		
15		



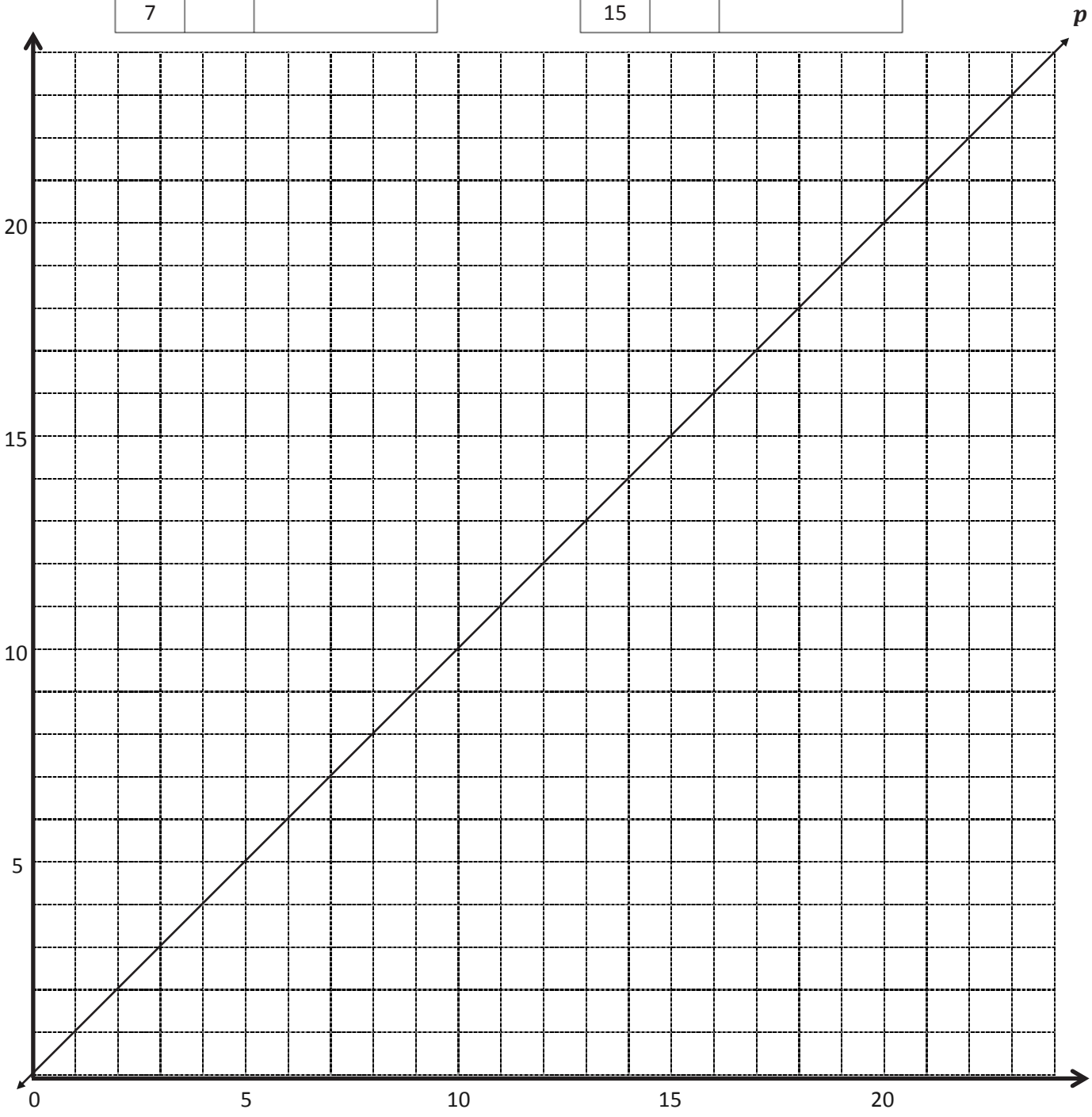
coordinate plane

Line g *Rule*: _____

x	y	(x, y)
1		
2		
5		
7		

Line h *Rule*: _____

x	y	(x, y)
3		
6		
12		
15		



coordinate plane

Name _____ Date _____

1. Complete the tables for the given rules.

Line ℓ

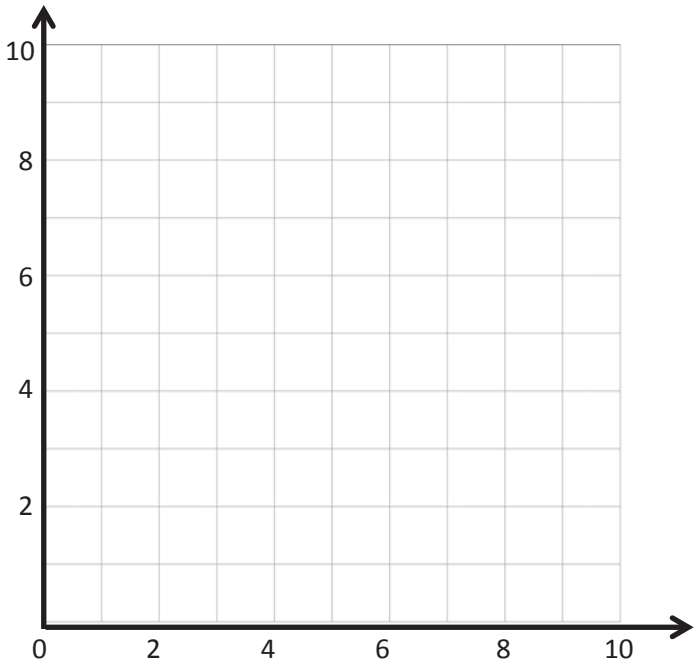
Rule: *Double* x

x	y	(x, y)
0		
1		
2		
3		

Line m

Rule: *Double* x, *then add 1*

x	y	(x, y)
0		
1		
2		
3		



a. Draw each line on the coordinate plane above.

b. Compare and contrast these lines.

c. Based on the patterns you see, predict what the line for the rule *double* x, *then subtract 1* would look like. Draw the line on the plane above.

2. Circle the point(s) that the line for the rule *multiply* x *by* $\frac{1}{3}$, *then add 1* would contain.

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

a. Explain how you know.

b. Give two other points that fall on this line.

3. Complete the tables for the given rules.

Line ℓ

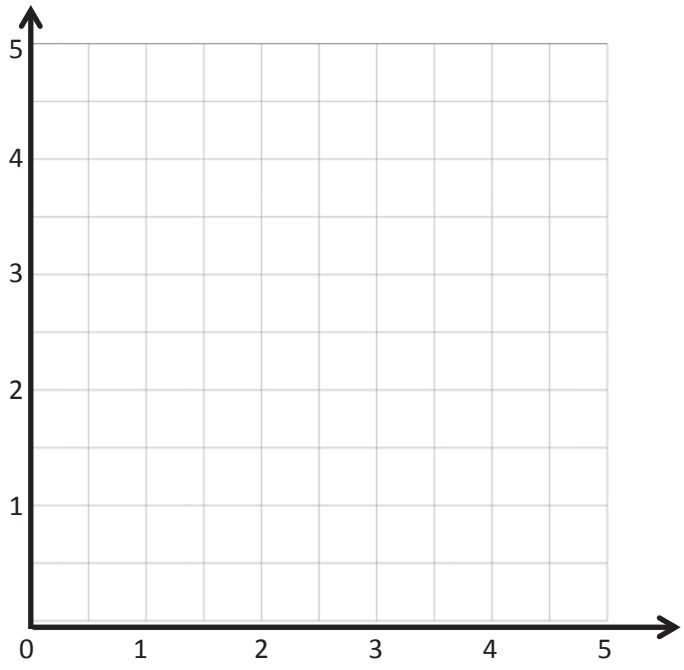
Rule: *Halve* x

x	y	(x, y)
0		
1		
2		
3		

Line m

Rule: *Halve* x, *then add* $1\frac{1}{2}$

x	y	(x, y)
0		
1		
2		
3		



a. Draw each line on the coordinate plane above.

b. Compare and contrast these lines.

c. Based on the patterns you see, predict what the line for the rule *halve* x, *then subtract 1* would look like. Draw the line on the plane above.

4. Circle the point(s) that the line for the rule *multiply* x *by* $\frac{2}{3}$, *then subtract 1* would contain.

$(1\frac{1}{3}, \frac{1}{9})$ $(2, \frac{1}{3})$ $(1\frac{3}{2}, 1\frac{1}{2})$ $(3, 1)$

a. Explain how you know.

b. Give two other points that fall on this line.

Line ℓ

Rule: Triple x

x	y	(x, y)
0		
1		
2		
4		

Line m

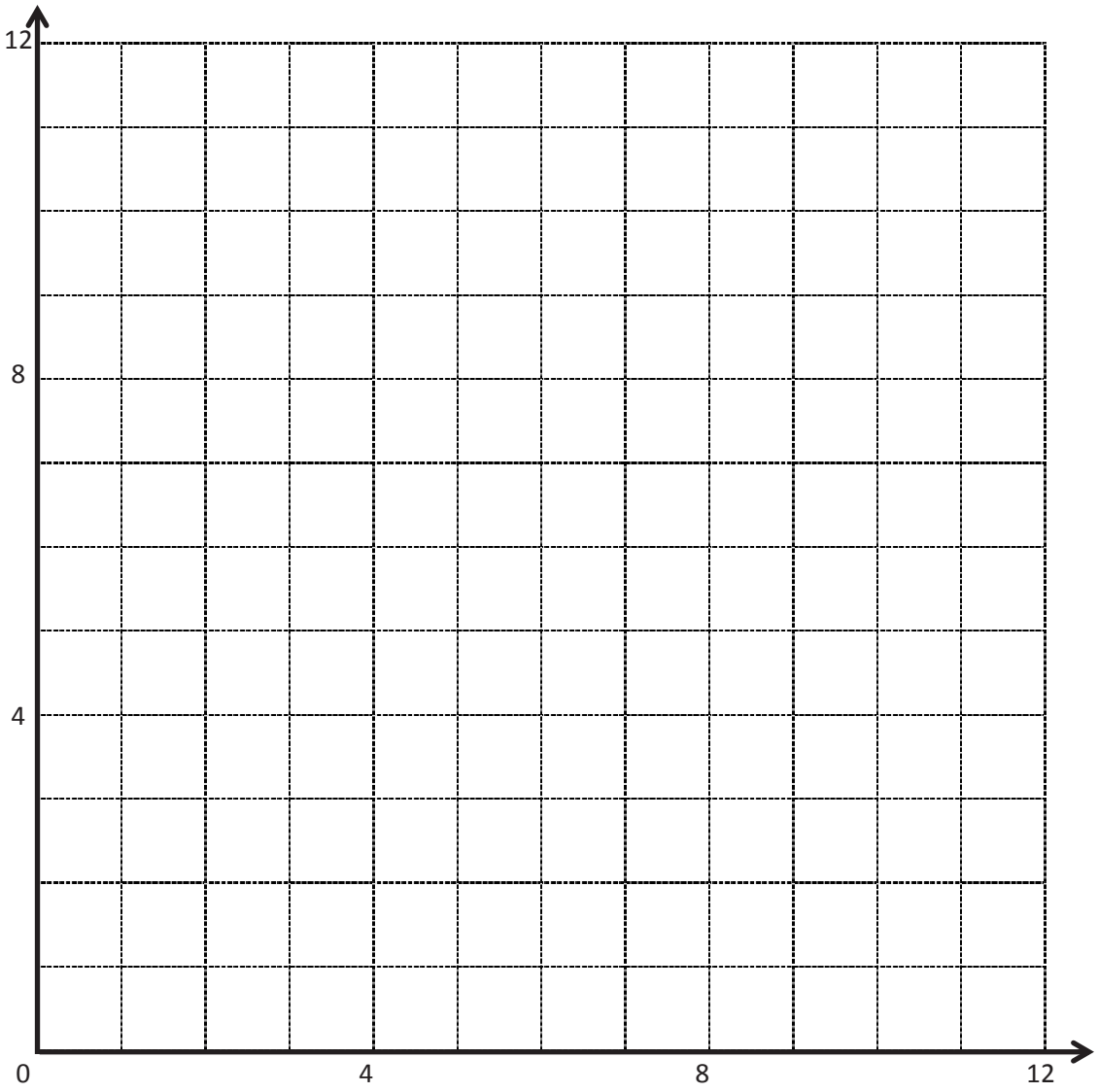
Rule: Triple x, then add 3

x	y	(x, y)
0		
1		
2		
3		

Line n

Rule: Triple x, then subtract 2

x	y	(x, y)
1		
2		
3		
4		



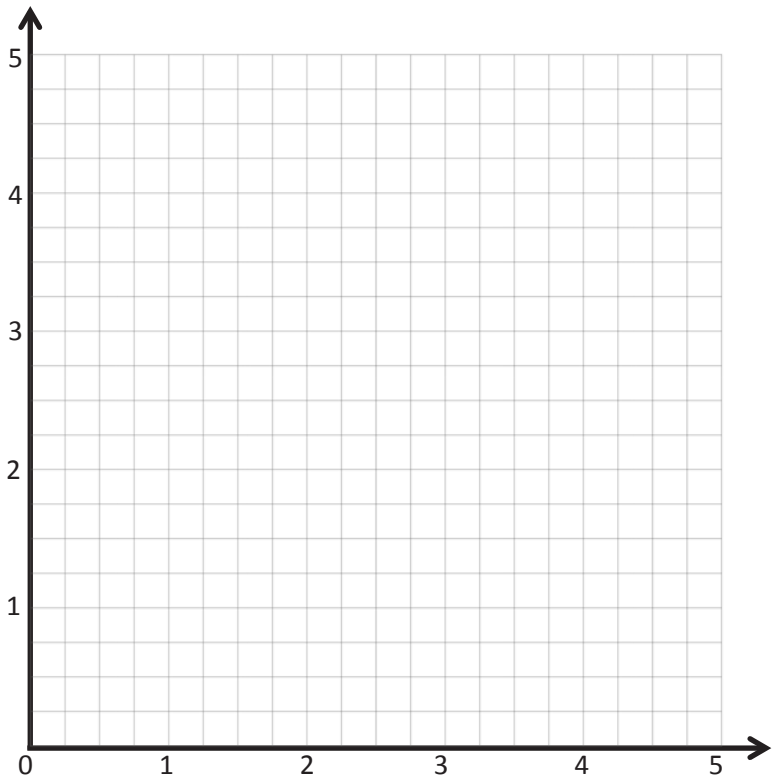
coordinate plane

Name _____ Date _____

1. Write a rule for the line that contains the points $(0, \frac{3}{4})$ and $(2\frac{1}{2}, 3\frac{1}{4})$.

   a. Identify 2 more points on this line. Draw the line on the grid below.

Point	x	y	(x, y)
B			
C			



   b. Write a rule for a line that is parallel to $\overleftrightarrow{BC}$ and goes through point $(1, \frac{1}{4})$.

2. Create a rule for the line that contains the points $(1, \frac{1}{4})$ and $(3, \frac{3}{4})$.

   a. Identify 2 more points on this line. Draw the line on the grid at right.

Point	x	y	(x, y)
G			
H			

   b. Write a rule for a line that passes through the origin and lies between $\overleftrightarrow{BC}$ and $\overleftrightarrow{GH}$.

3. Create a rule for a line that contains the point $(\frac{1}{4}, 1\frac{1}{4})$, using the operation or description below. Then, name 2 other points that would fall on each line.

a. Addition: _____

Point	x	y	(x, y)
T			
U			

b. A line parallel to the x-axis: _____

Point	x	y	(x, y)
G			
H			

c. Multiplication: _____

Point	x	y	(x, y)
A			
B			

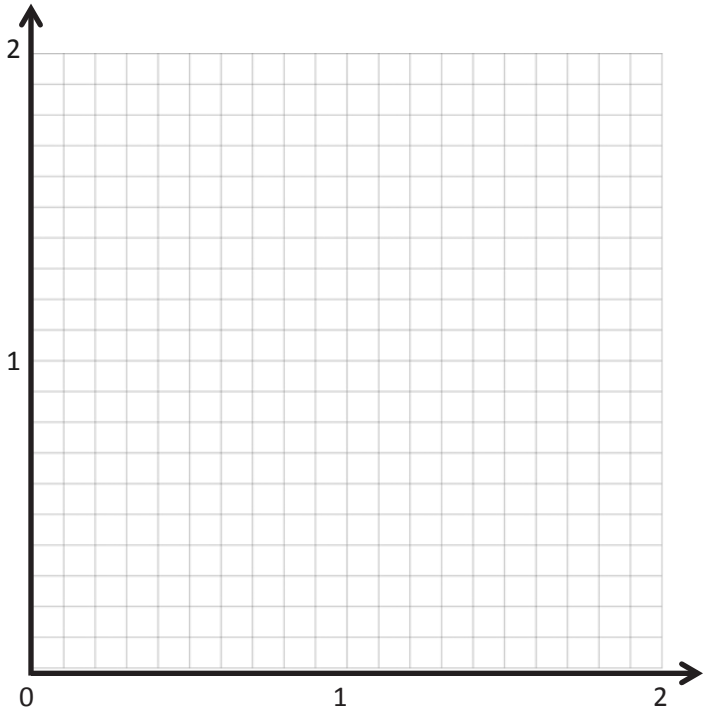
d. A line parallel to the y-axis: _____

Point	x	y	(x, y)
V			
W			

e. Multiplication with addition: _____

Point	x	y	(x, y)
R			
S			

4. Mrs. Boyd asked her students to give a rule that could describe a line that contains the point (0.6, 1.8). Avi said the rule could be *multiply x by 3*. Ezra claims this could be a vertical line, and the rule could be *x is always 0.6.* Erik thinks the rule could be *add 1.2 to x*. Mrs. Boyd says that all the lines they are describing could describe a line that contains the point she gave. Explain how that is possible, and draw the lines on the coordinate plane to support your response.



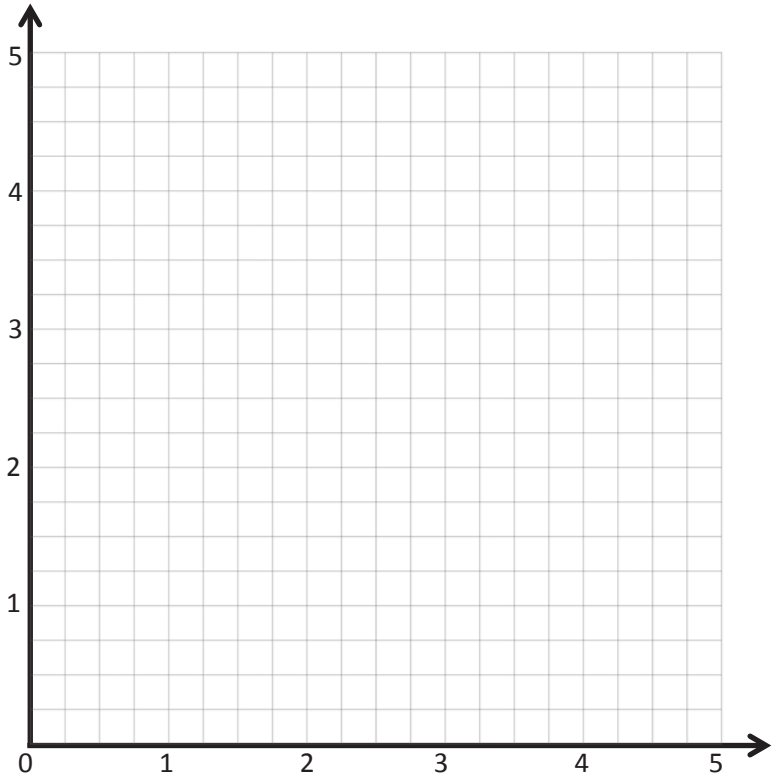
Extension:

5. Create a mixed operation rule for the line that contains the points (0, 1) and (1, 3).

a. Identify 2 more points, O and P, on this line. Draw the line on the grid.

Point	x	y	(x, y)
O			
P			

b. Write a rule for a line that is parallel to $\overleftrightarrow{OP}$ and goes through point $(1, 2\frac{1}{2})$.



Line $\boldsymbol{l}$

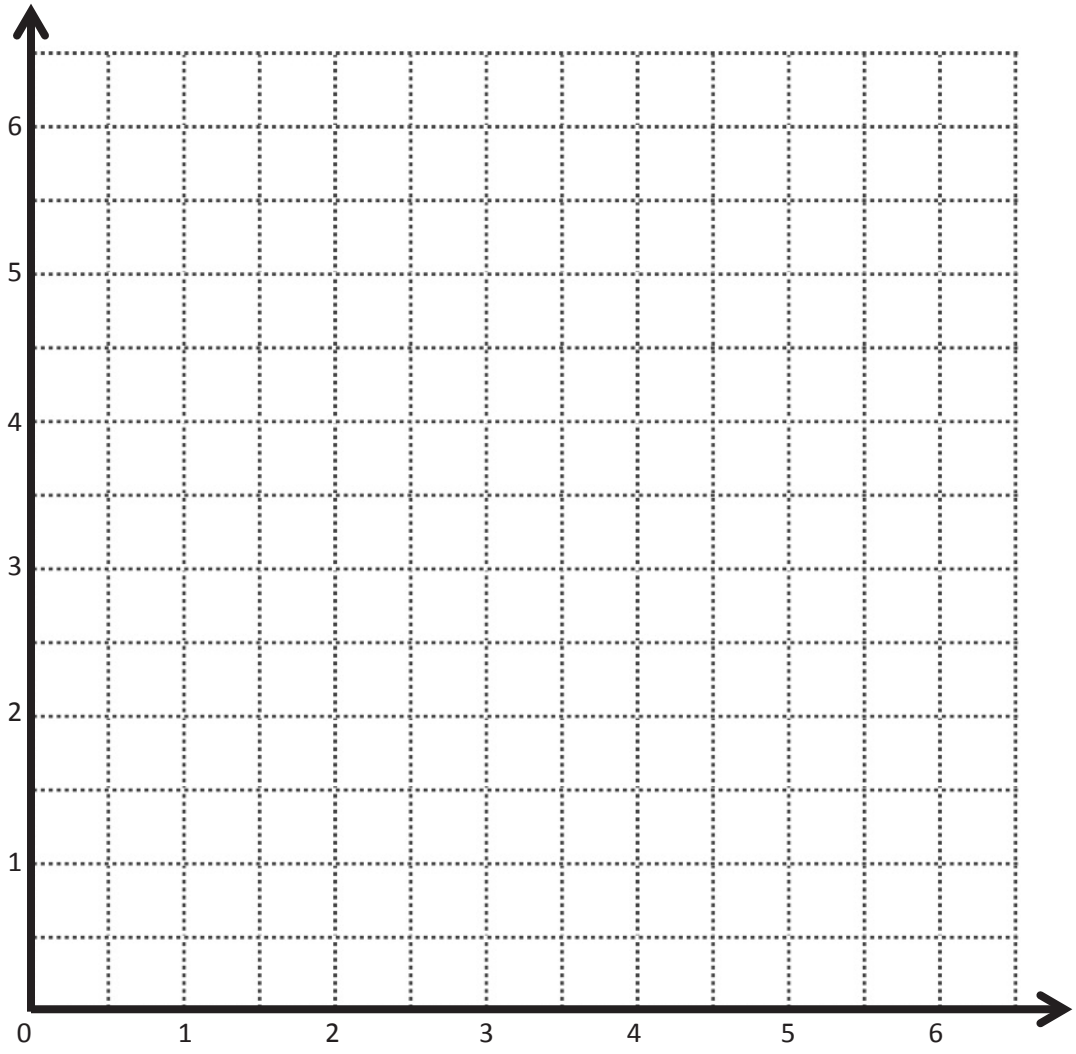
Rule: _____

Point	x	y	(x, y)
A	$1\frac{1}{2}$	3	$(1\frac{1}{2}, 3)$
B			
C			
D			

Line $\boldsymbol{m}$

Rule: _____

Point	x	y	(x, y)
A			
E			
F			
G			

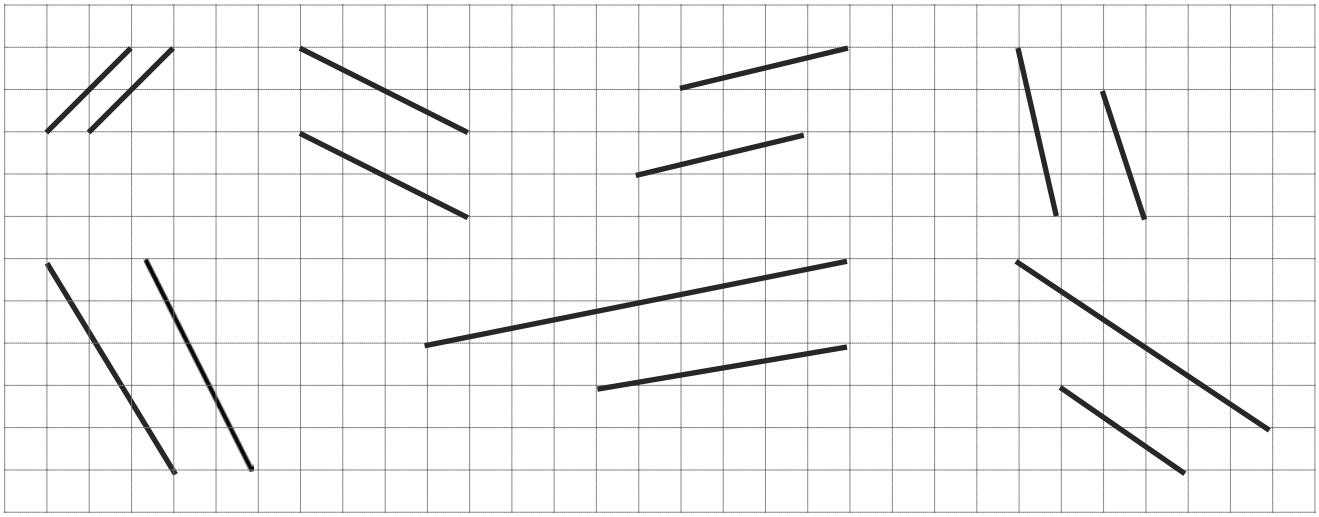


coordinate plane

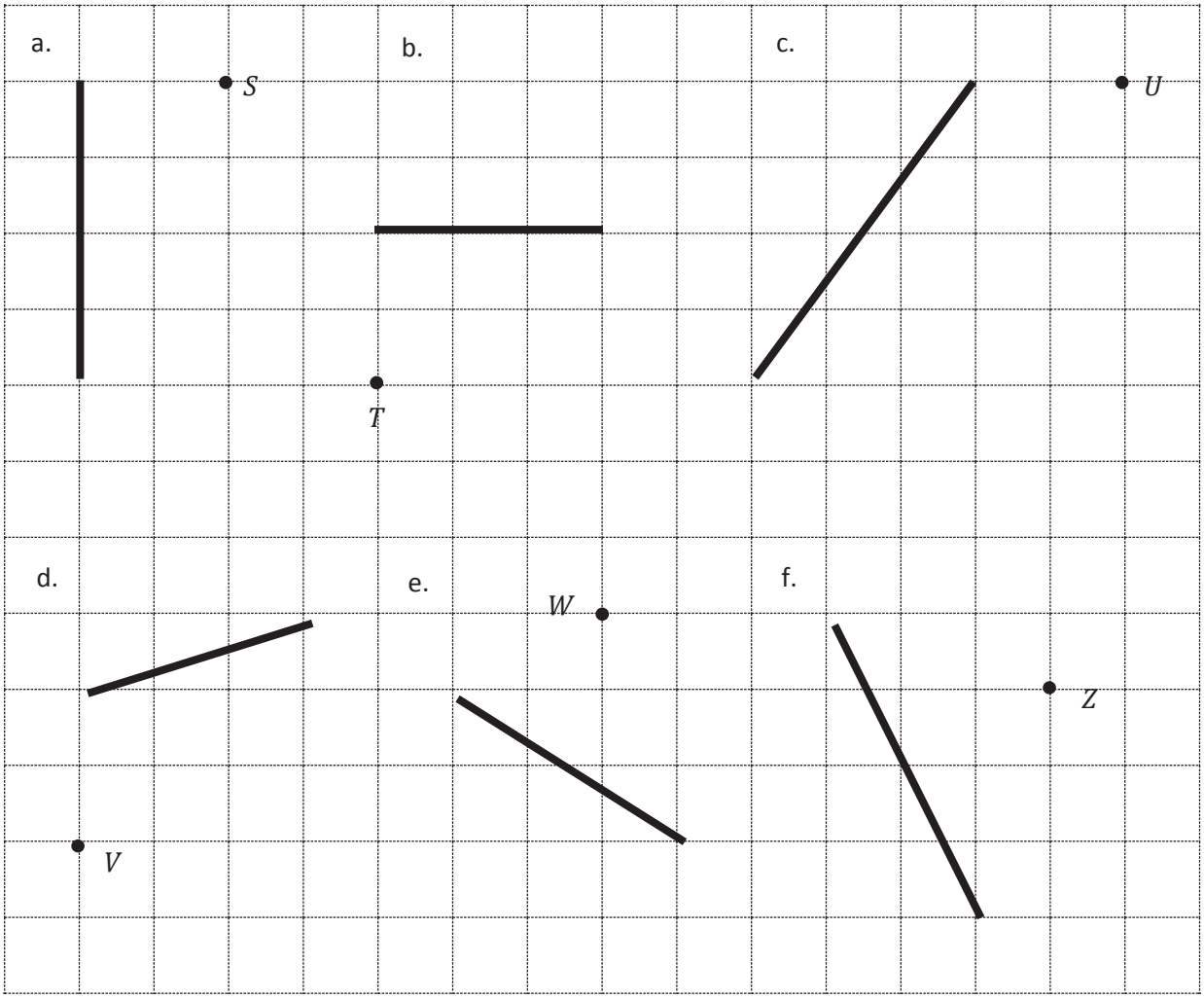
Name _____ Date _____

1. Use a right angle template and straightedge to draw at least four sets of parallel lines in the space below.

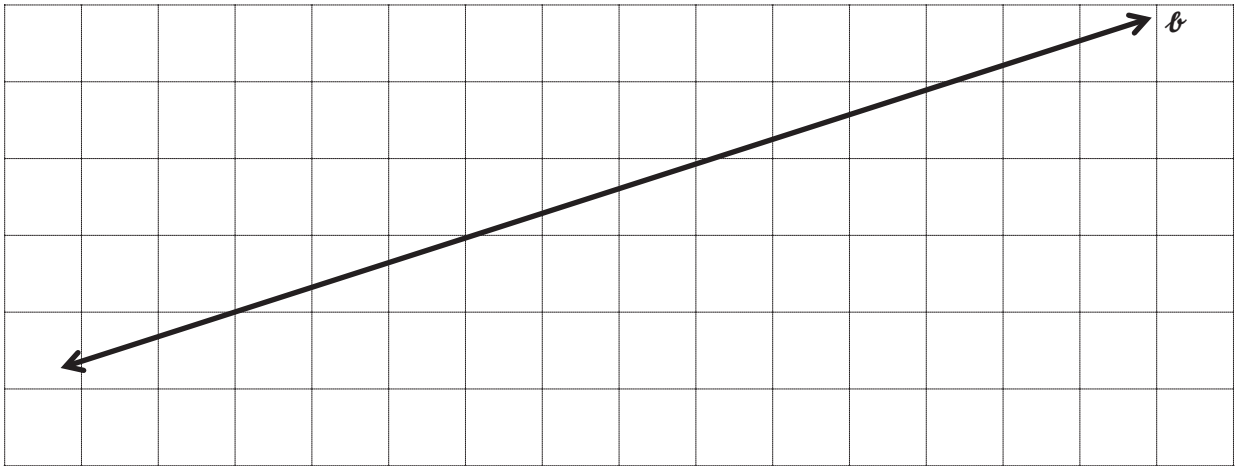
2. Circle the segments that are parallel.

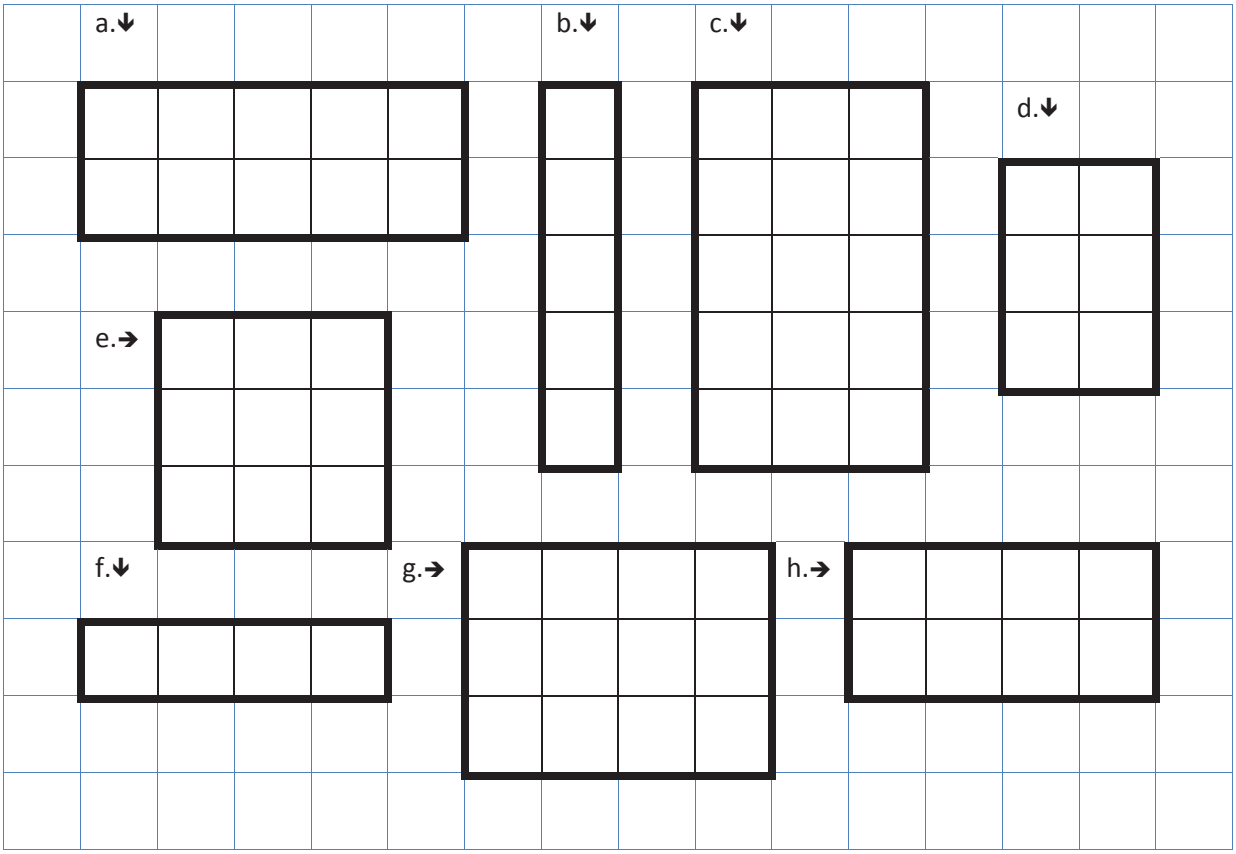


3. Use your straightedge to draw a segment parallel to each segment through the given point.

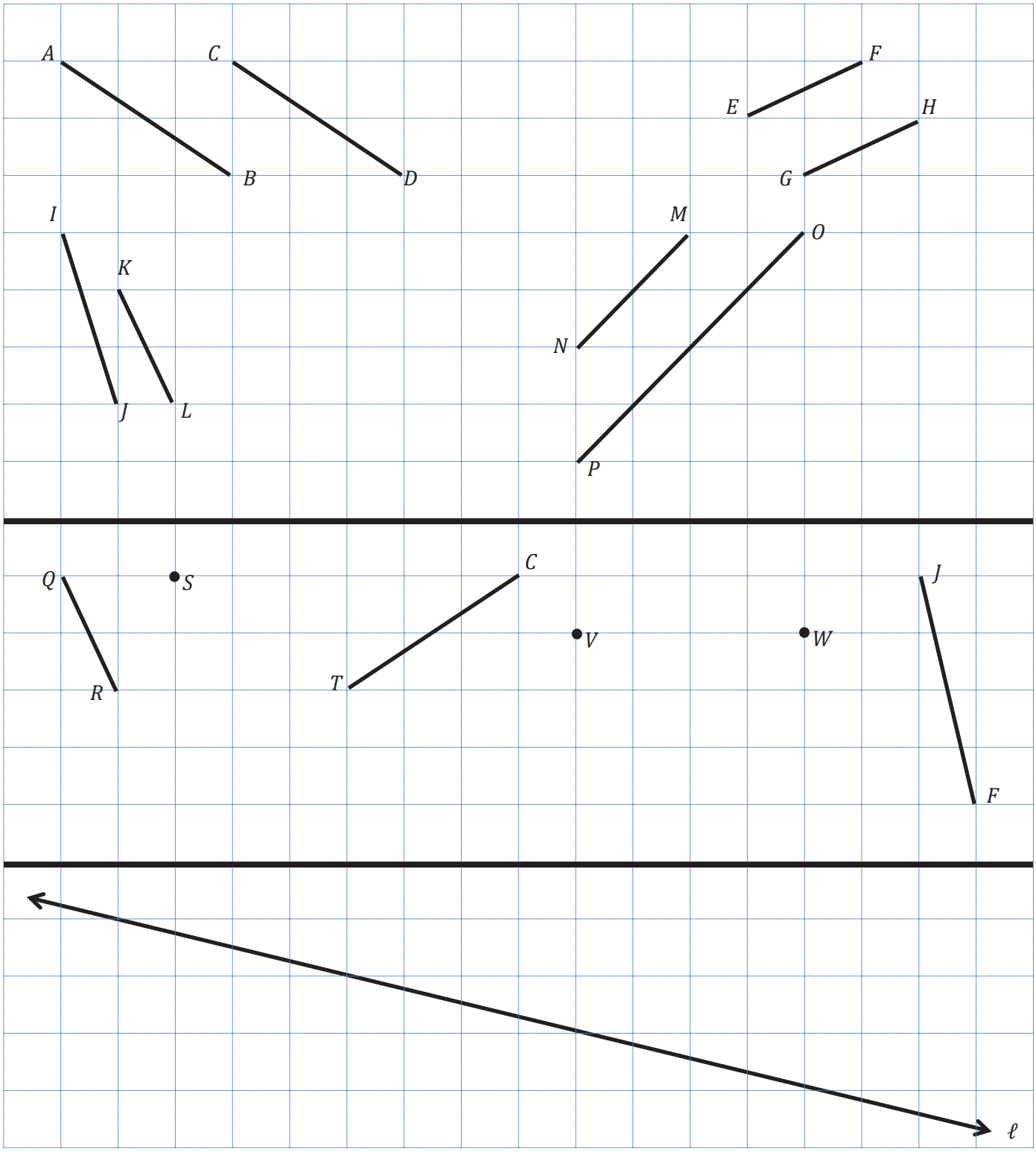


4. Draw 2 different lines parallel to line $\mathscr{b}$.





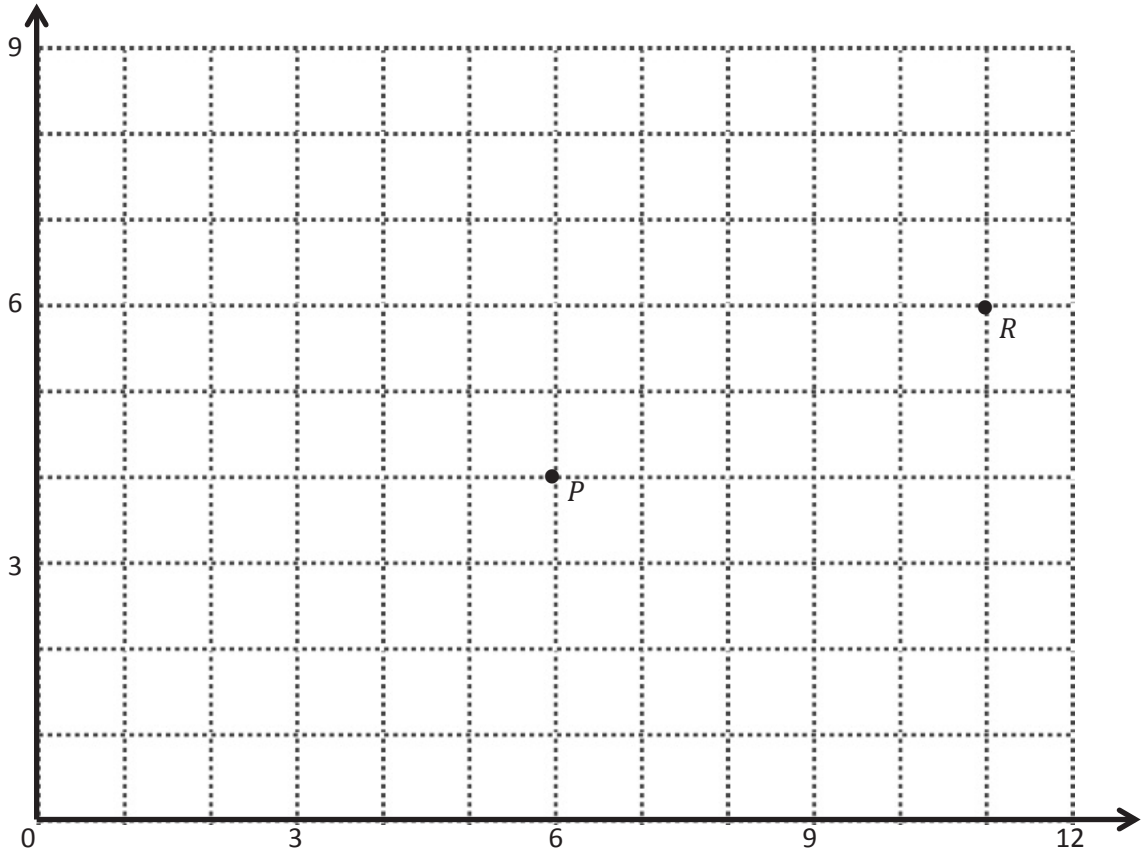
rectangles



recording sheet

Name _____ Date _____

1. Use the coordinate plane below to complete the following tasks.



a. Identify the locations of P and R. P: (_____, _____) R: (_____, _____)

b. Draw $\overleftrightarrow{PR}$.

c. Plot the following coordinate pairs on the plane.

S: (6, 7) T: (11, 9)

d. Draw $\overleftrightarrow{ST}$.

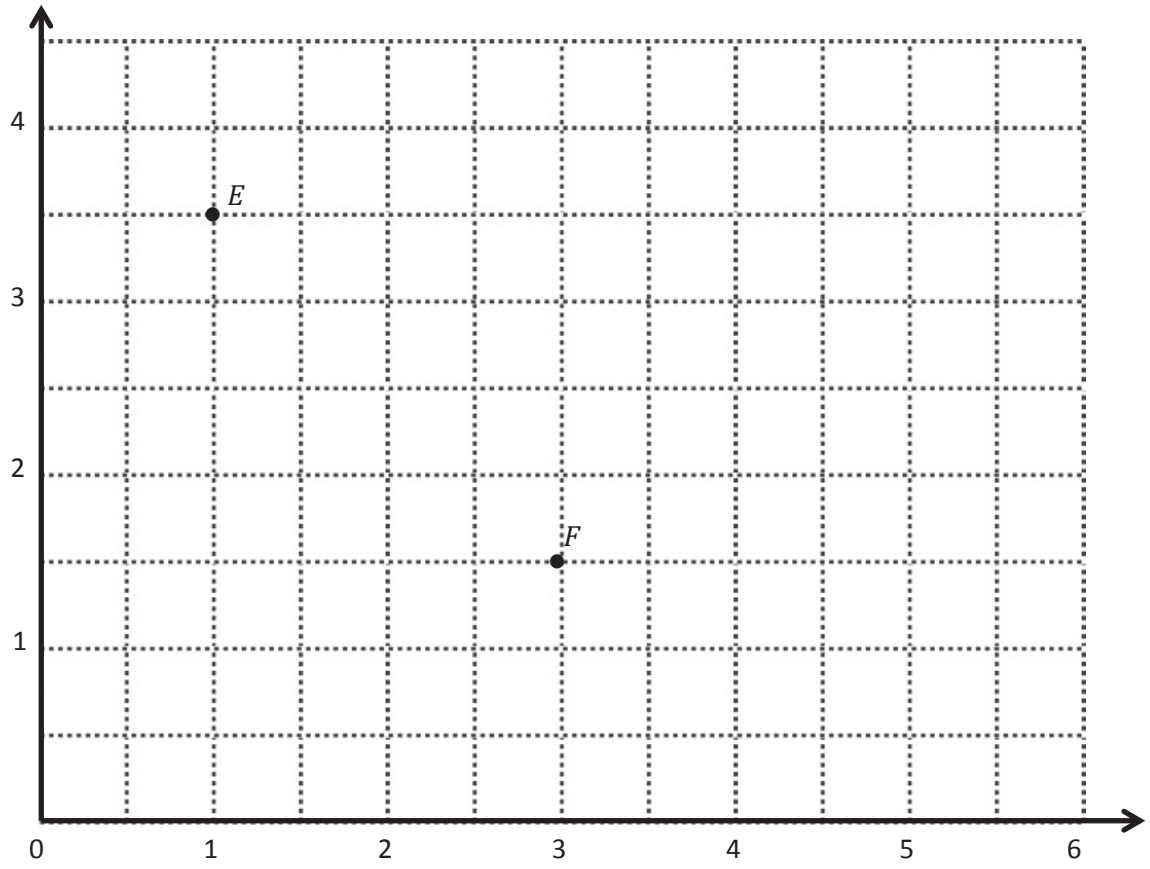
e. Circle the relationship between $\overleftrightarrow{PR}$ and $\overleftrightarrow{ST}$. $\overleftrightarrow{PR} \perp \overleftrightarrow{ST}$ $\overleftrightarrow{PR} \parallel \overleftrightarrow{ST}$

f. Give the coordinates of a pair of points, U and V, such that $\overleftrightarrow{UV} \parallel \overleftrightarrow{PR}$.

U: (_____, _____) V: (_____, _____)

g. Draw $\overleftrightarrow{UV}$.

2. Use the coordinate plane below to complete the following tasks.



a. Identify the locations of E and F. E: (_____, _____) F: (_____, _____)

b. Draw $\overleftrightarrow{EF}$.

c. Generate coordinate pairs for L and M, such that $\overleftrightarrow{EF} \parallel \overleftrightarrow{LM}$.

L: (_____, _____) M: (_____, _____)

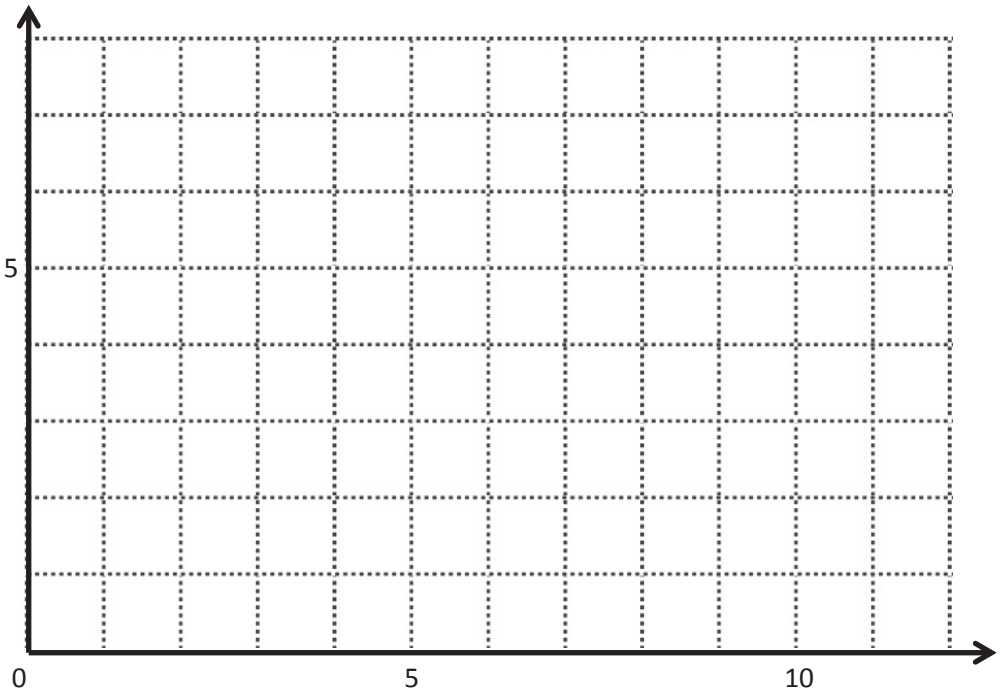
d. Draw $\overleftrightarrow{LM}$.

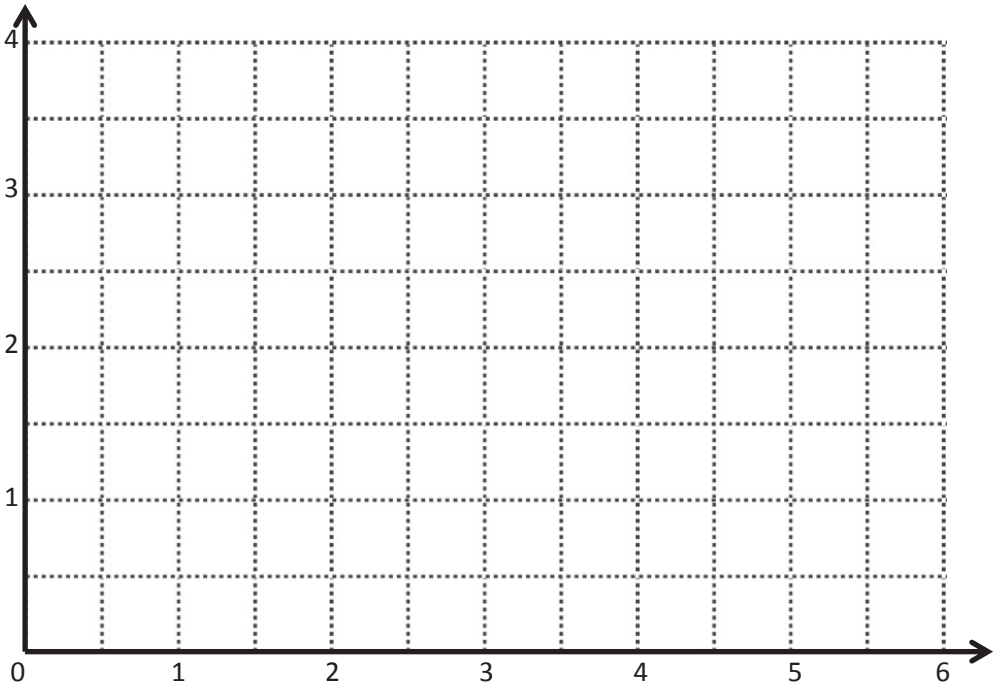
e. Explain the pattern you made use of when generating coordinate pairs for L and M.

f. Give the coordinates of a point, H, such that $\overleftrightarrow{EF} \parallel \overleftrightarrow{GH}$.

G: $(1\frac{1}{2}, 4)$ H: (_____, _____)

g. Explain how you chose the coordinates for H.

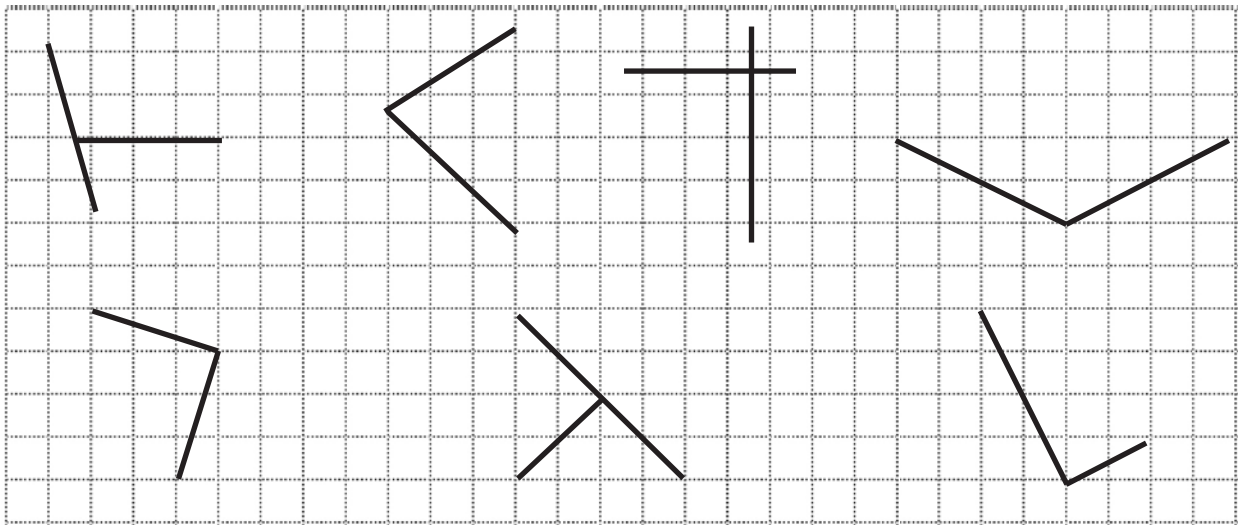




coordinate plane

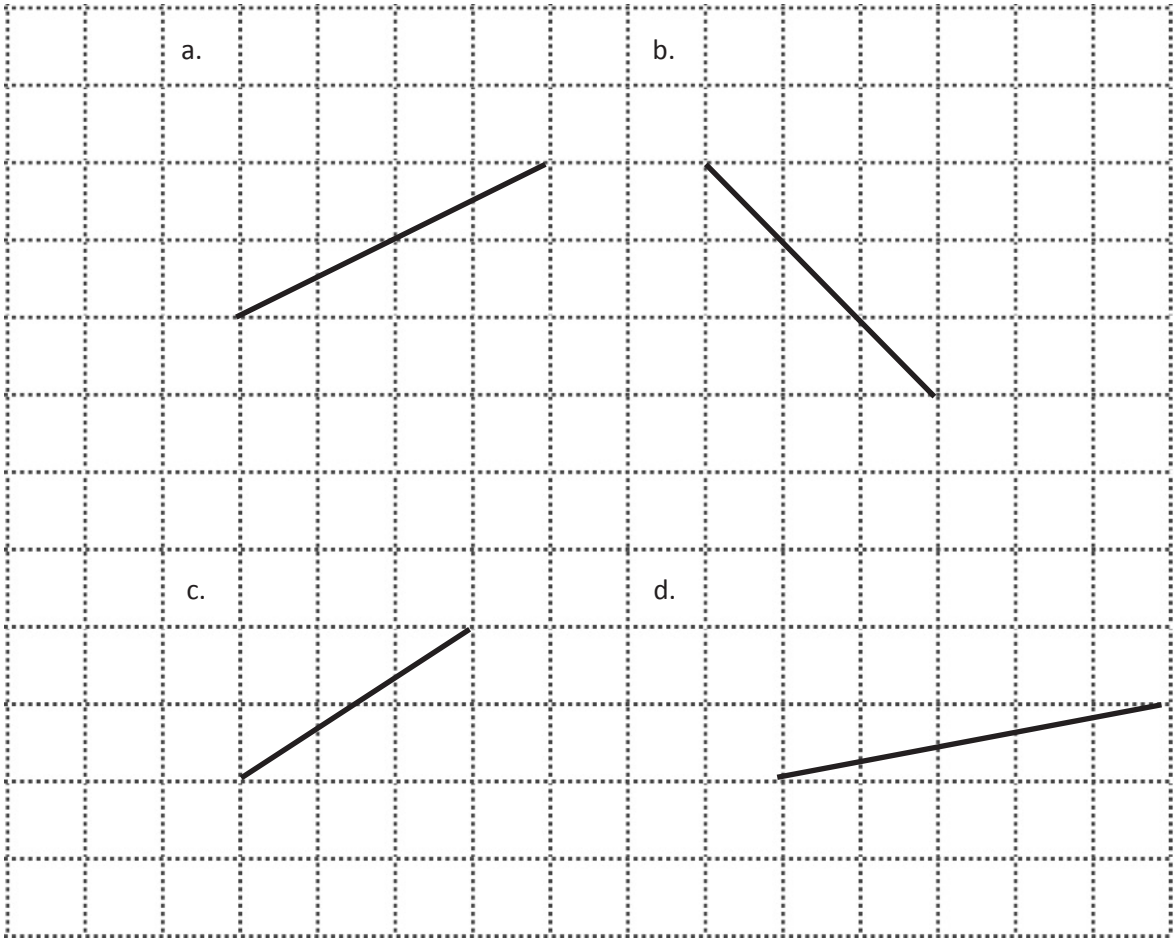
Name _____ Date _____

1. Circle the pairs of segments that are perpendicular.

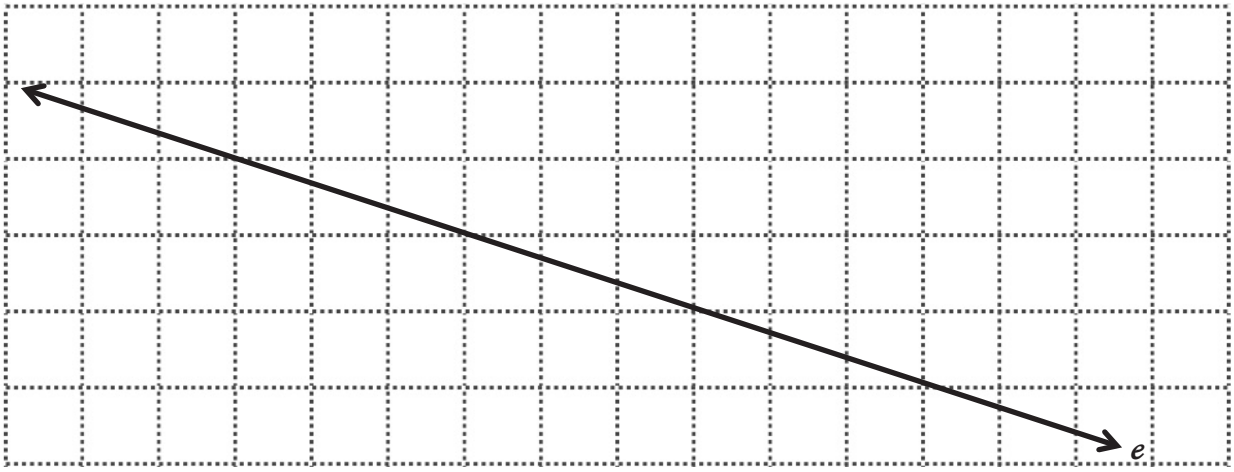


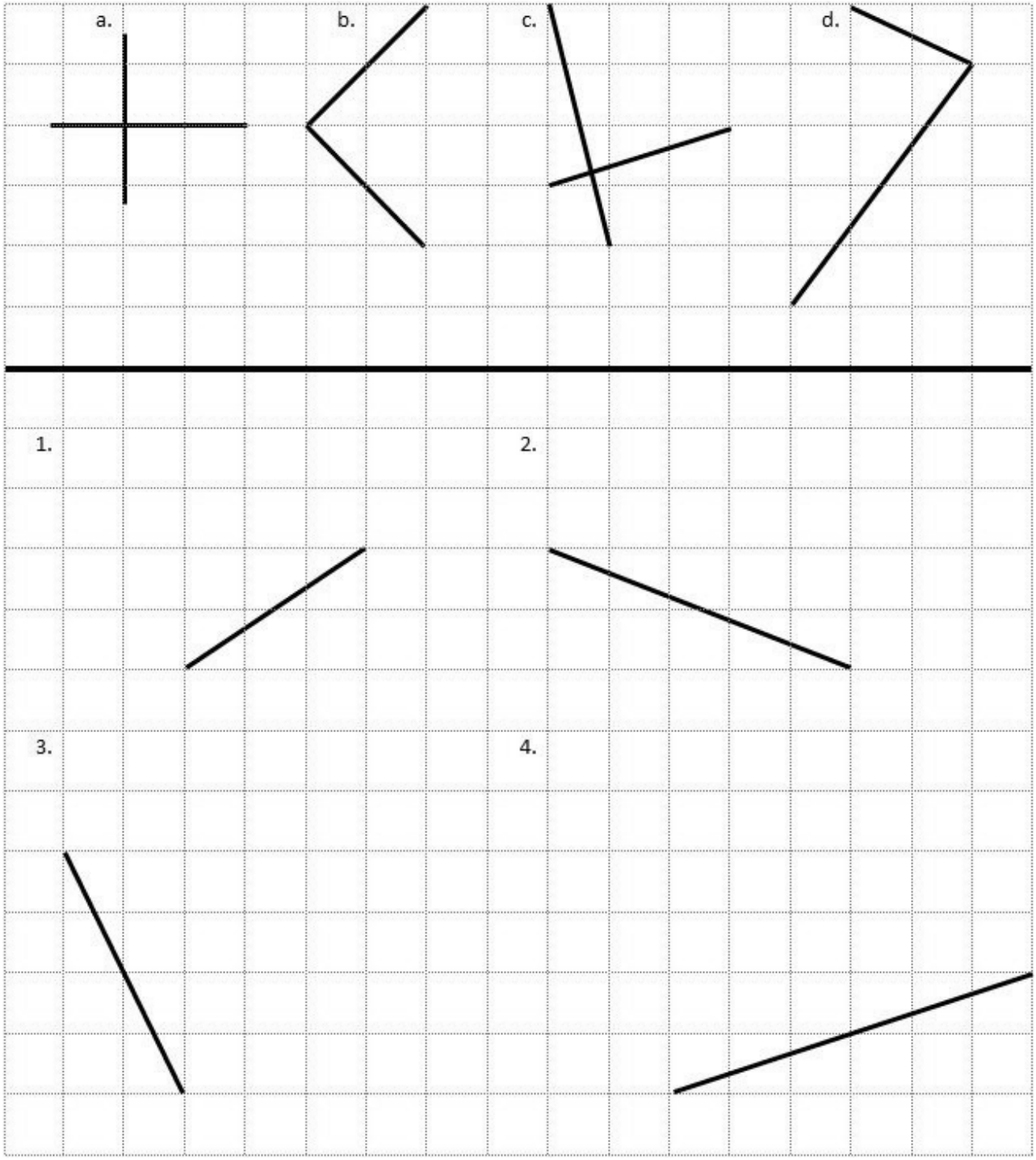
2. In the space below, use your right triangle templates to draw at least 3 different sets of perpendicular lines.

3. Draw a segment perpendicular to each given segment. Show your thinking by sketching triangles as needed.

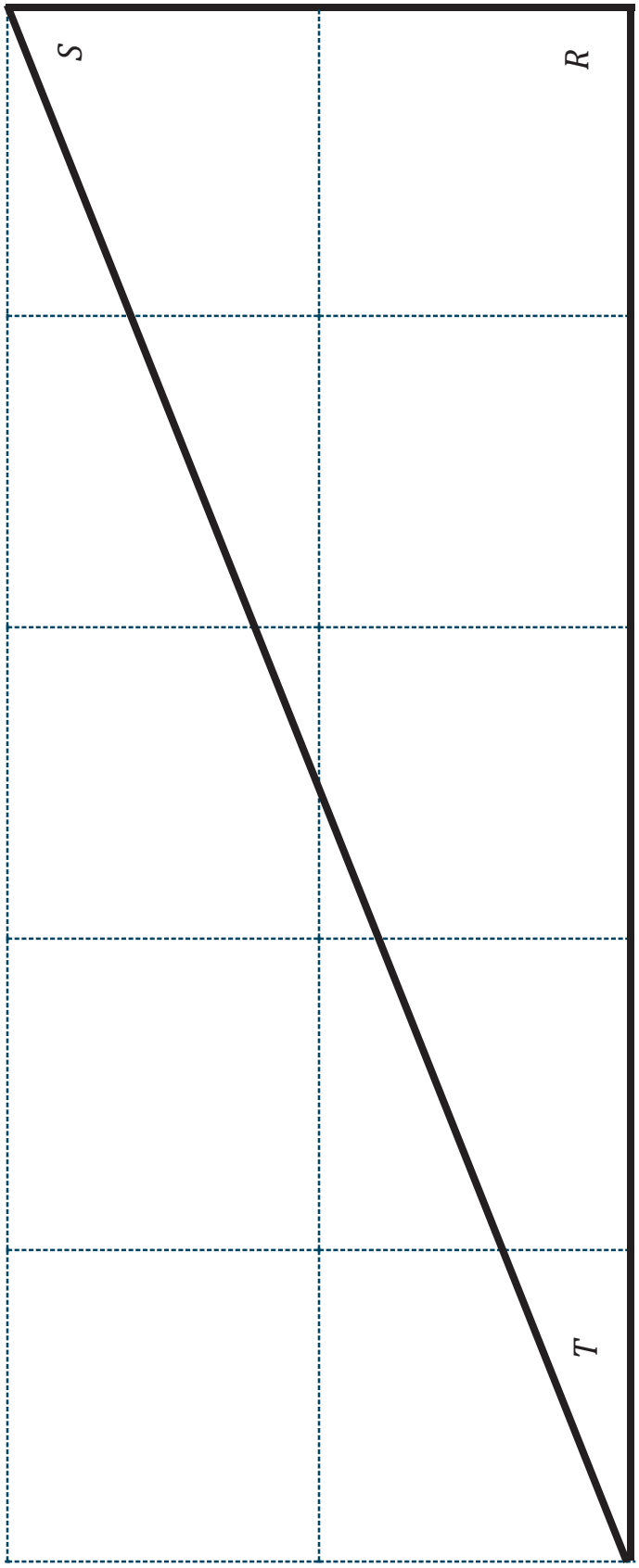


4. Draw 2 different lines perpendicular to line e.

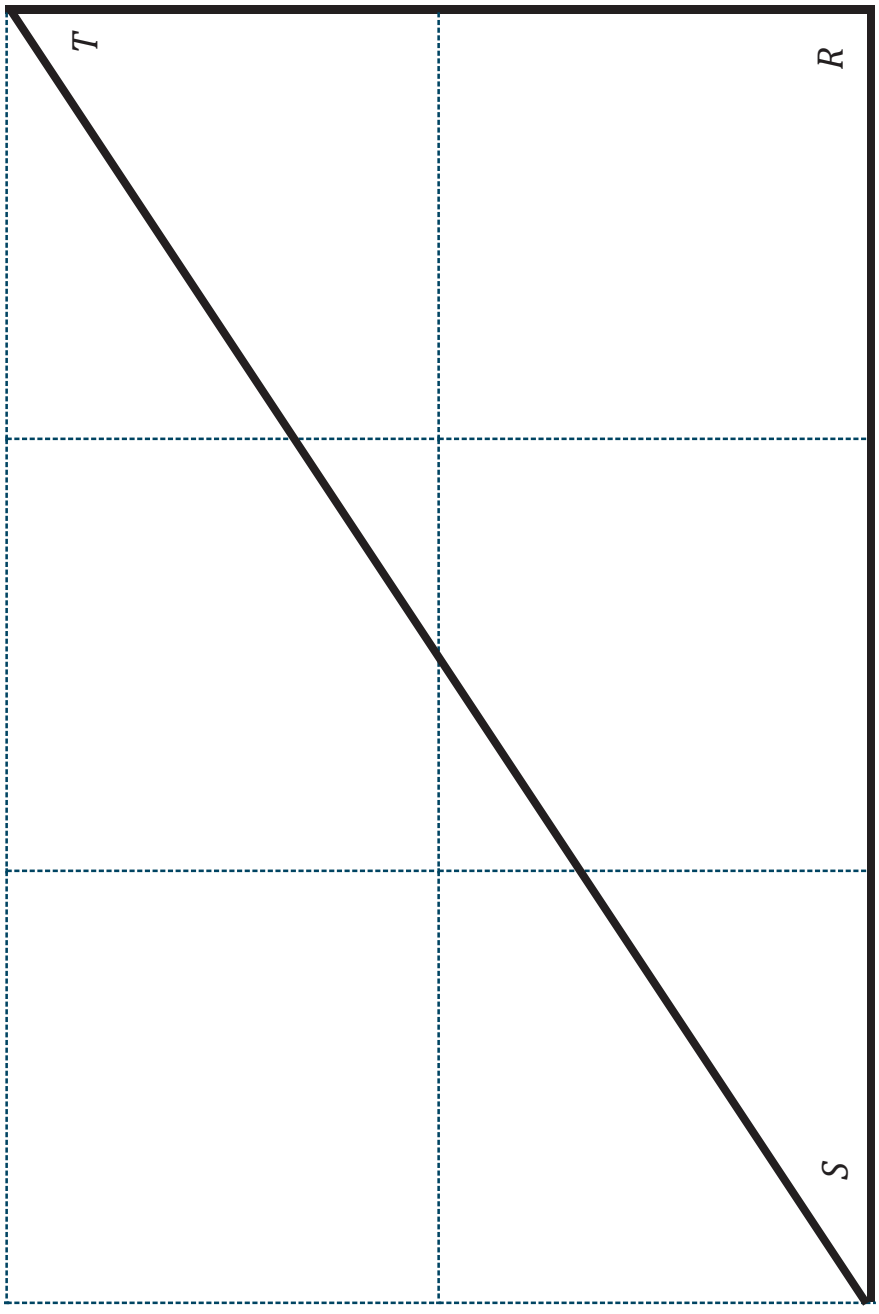




recording sheet



triangle RST (a)

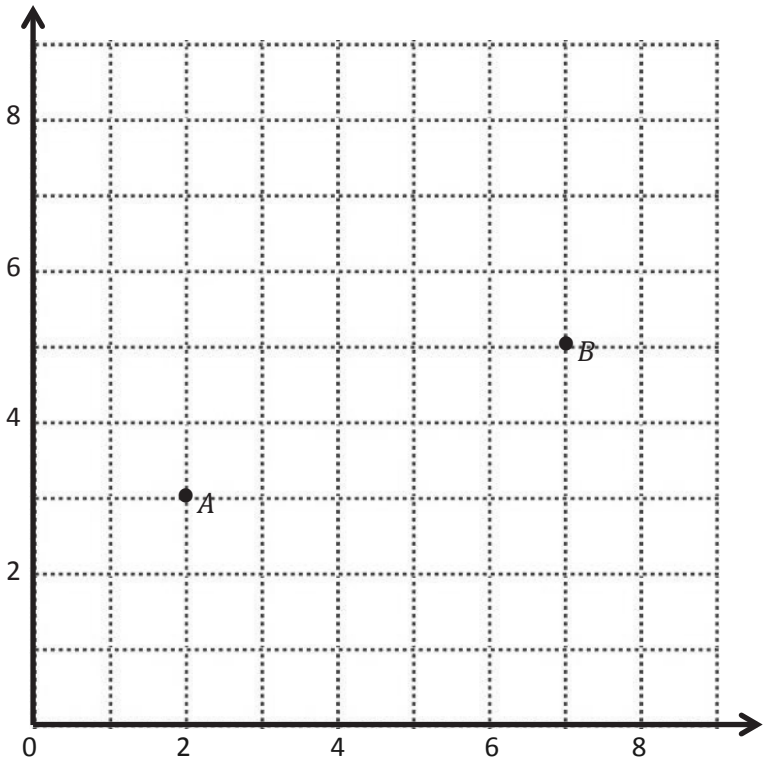


triangle RST (b)

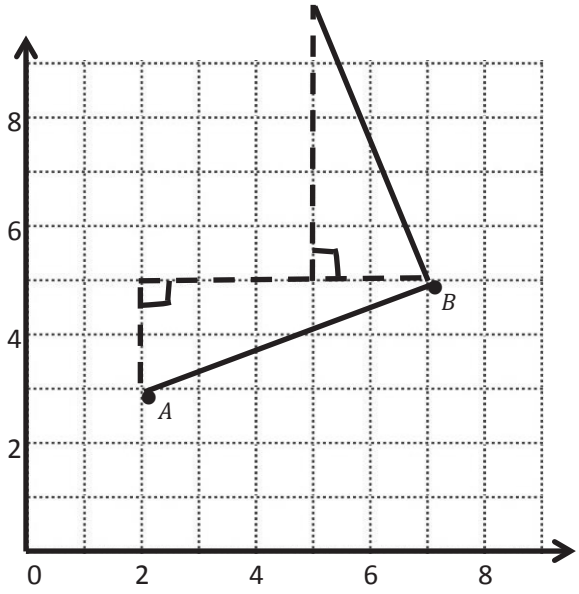
Name _____ Date _____

1. Use the coordinate plane below to complete the following tasks.

   a. Draw $\overline{AB}$.
   b. Plot point C (0, 8).
   c. Draw $\overline{AC}$.
   d. Explain how you know $\angle CAB$ is a right angle without measuring it.



   e. Sean drew the picture to the right to find a segment perpendicular to $\overline{AB}$. Explain why Sean is correct.



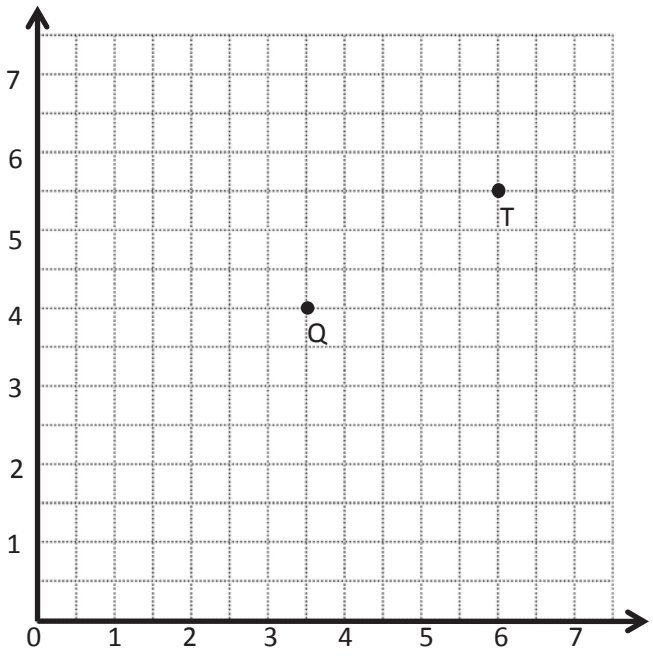
2. Use the coordinate plane below to complete the following tasks.

   a. Draw $\overline{QT}$.

   b. Plot point R (2, $6\frac{1}{2}$).

   c. Draw $\overline{QR}$.

   d. Explain how you know $\angle RQT$ is a right angle without measuring it.



   e. Compare the coordinates of points Q and T. What is the difference of the x-coordinates? The y-coordinates?

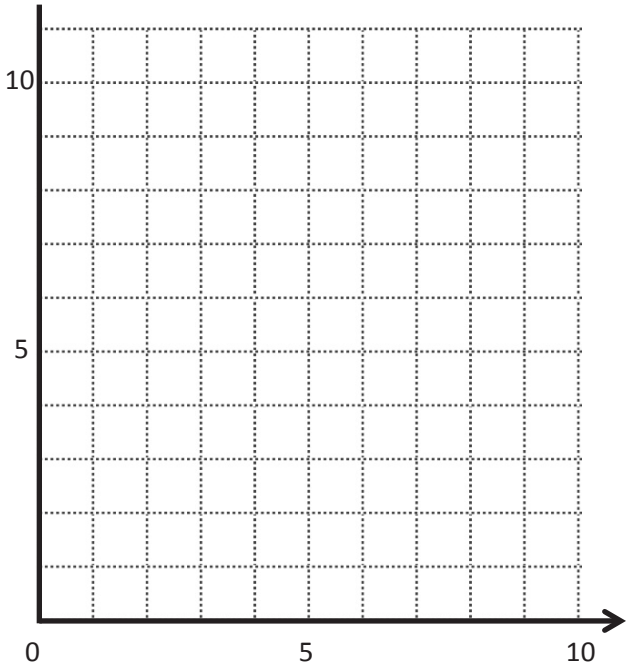
   f. Compare the coordinates of points Q and R. What is the difference of the x-coordinates? The y-coordinates?

   g. What is the relationship of the differences you found in (e) and (f) to the triangles of which these two segments are a part?

3. $\overleftrightarrow{EF}$ contains the following points. E: (4, 1) F: (8, 7)

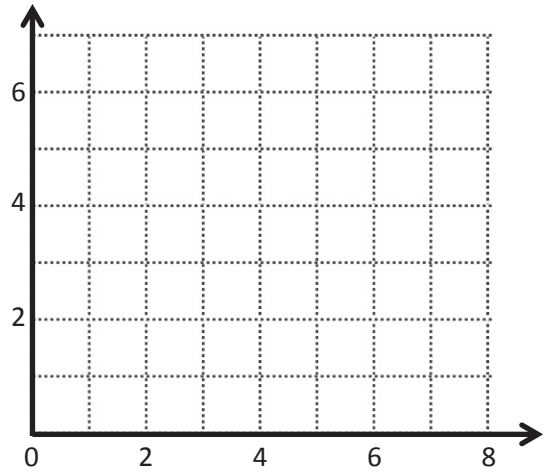
   Give the coordinates of a pair of points G and H, such that $\overleftrightarrow{EF} \perp \overleftrightarrow{GH}$.

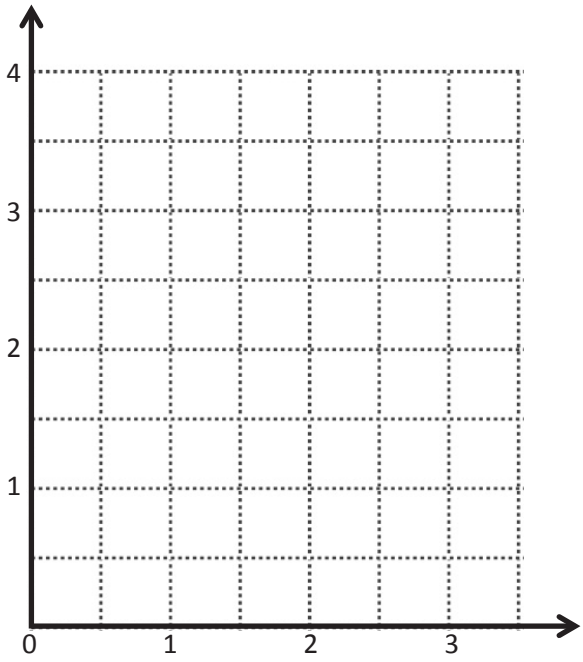
   G: (_____, _____) H: (_____, _____)



	(x, y)
A	
B	
C	

	(x, y)
D	
E	
F	



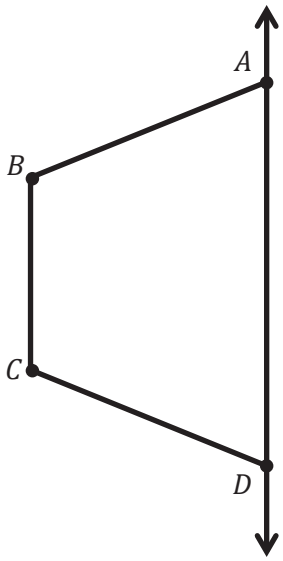


	(x, y)
G	
H	
I	

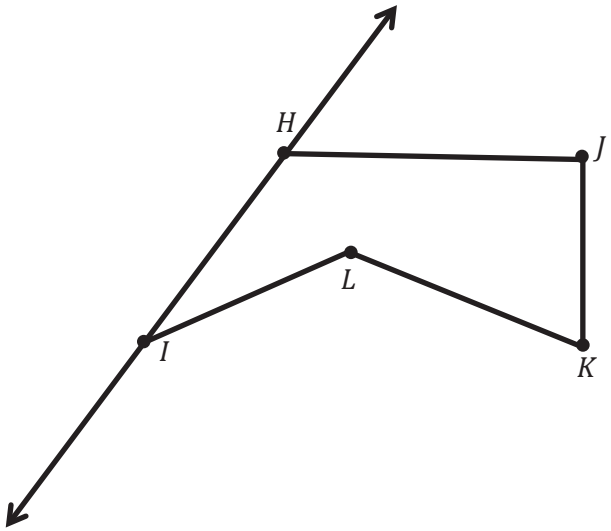
coordinate plane

Name _____ Date _____

1. Draw to create a figure that is symmetric about $\overleftrightarrow{AD}$.



2. Draw precisely to create a figure that is symmetric about $\overleftrightarrow{HI}$.



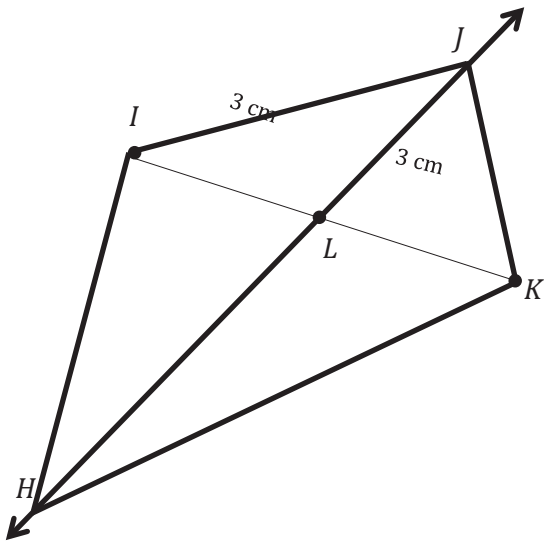
3. Complete the following construction in the space below.

   a. Plot 3 non-collinear points, D, E, and F.

   b. Draw $\overline{DE}$, $\overline{EF}$, and $\overleftrightarrow{DF}$.

   c. Plot point G, and draw the remaining sides, such that quadrilateral $DEFG$ is symmetric about $\overleftrightarrow{DF}$.

4. Stu says that quadrilateral $HIJK$ is symmetric about $\overleftrightarrow{HJ}$ because $IL = LK$. Use your tools to determine Stu's mistake. Explain your thinking.



Name _____ Date _____

1. Use the plane to the right to complete the following tasks.
   a. Draw a line $\boldsymbol{t}$ whose rule is y *is always 0.7*.
   b. Plot the points from Table A on the grid in order. Then, draw line segments to connect the points.

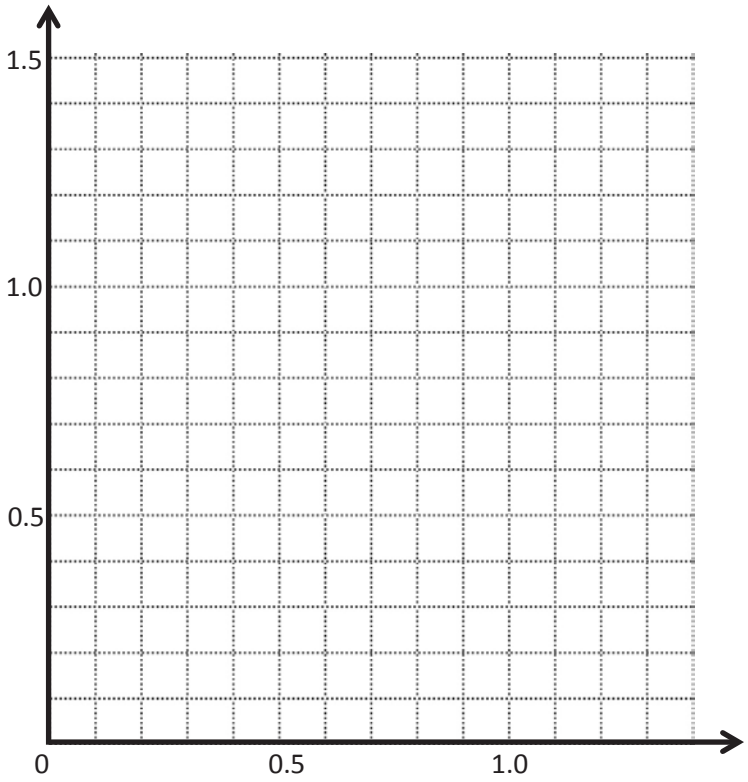


Table A

(x, y)
(0.1, 0.5)
(0.2, 0.3)
(0.3, 0.5)
(0.5, 0.1)
(0.6, 0.2)
(0.8, 0.2)
(0.9, 0.1)
(1.1, 0.5)
(1.2, 0.3)
(1.3, 0.5)

Table B

(x, y)

   c. Complete the drawing to create a figure that is symmetric about line $\boldsymbol{t}$. For each point in Table A, record the corresponding point on the other side of the line of symmetry in Table B.
   d. Compare the y-coordinates in Table A with those in Table B. What do you notice?
   e. Compare the x-coordinates in Table A with those in Table B. What do you notice?

2. This figure has a second line of symmetry. Draw the line on the plane and write the rule for this line.

3. Use the plane below to complete the following tasks.

   a. Draw a line $\boldsymbol{u}$ whose rule is y *is equal to* $x + \frac{1}{4}$.

   b. Construct a figure with a total of 6 points, all on the same side of the line.

   c. Record the coordinates of each point, in the order in which they were drawn, in Table A.

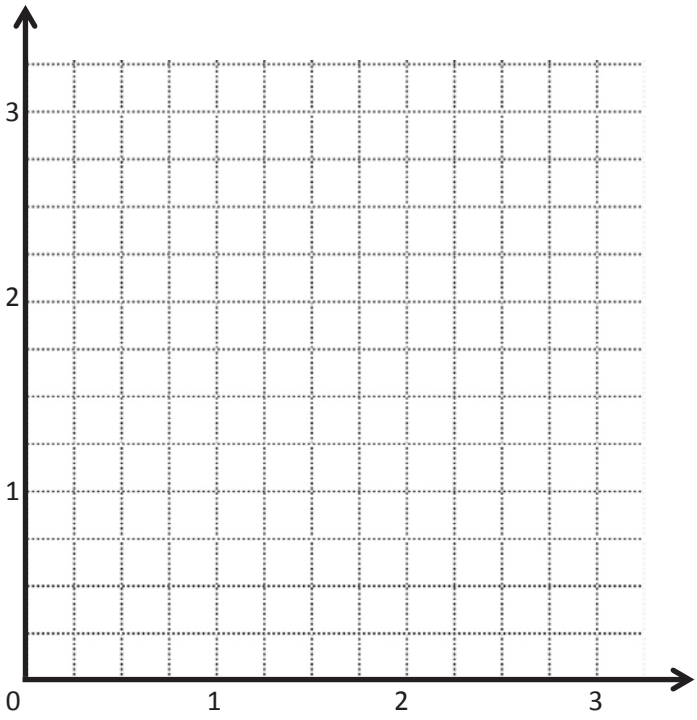
   d. Swap your paper with a neighbor and have him or her complete parts e–f, below.

Table A

(x, y)

Table B

(x, y)



   e. Complete the drawing to create a figure that is symmetric about $\boldsymbol{u}$. For each point in Table A, record the corresponding point on the other side of the line of symmetry in Table B.

   f. Explain how you found the points symmetric to your partner's about $\boldsymbol{u}$.

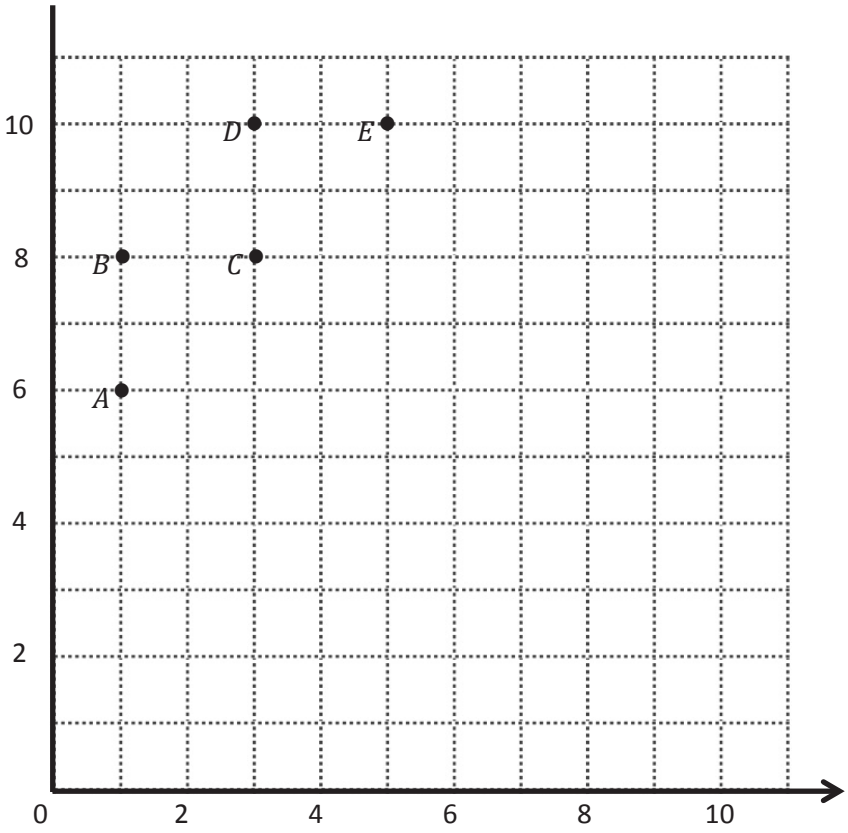


Table A

Point	(x, y)
A	
B	
C	
D	
E	

Table C

(x, y)

Table B

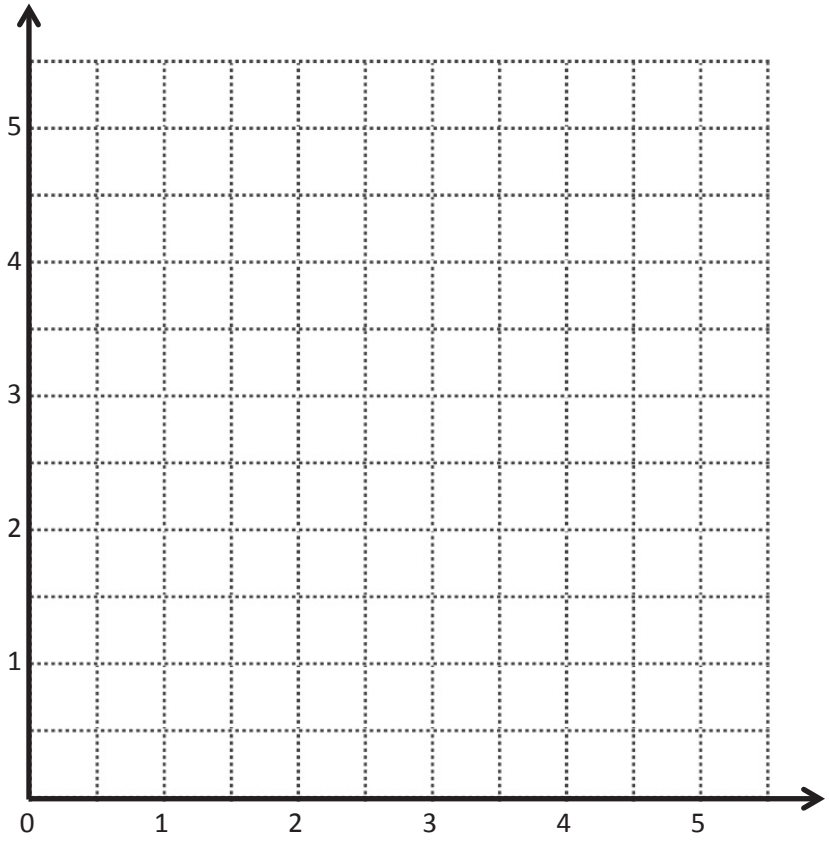
Point	(x, y)
I	
H	
G	
F	

Table D

(x, y)

Table E

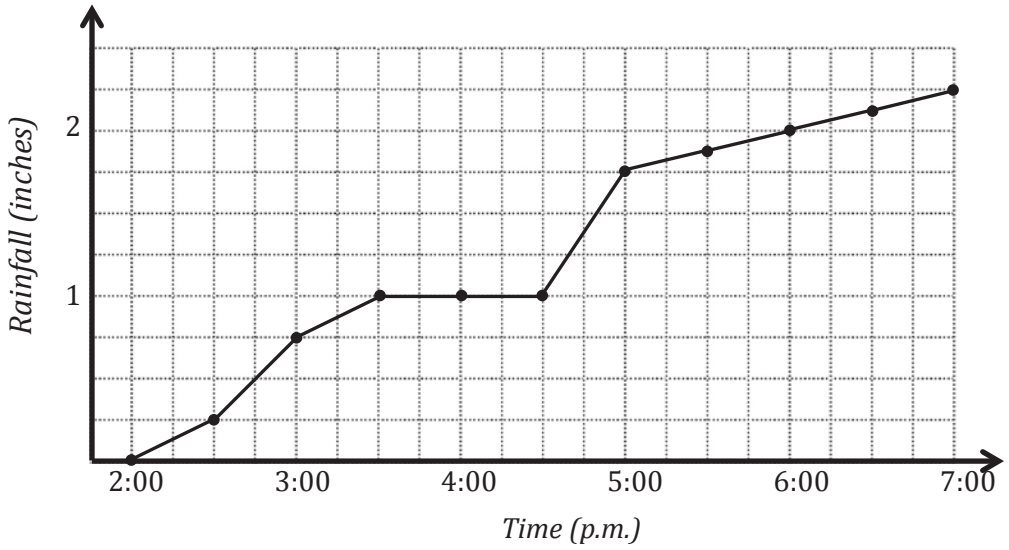
Point	(x, y)
A	(1, 1)
B	$(1\frac{1}{2}, 3\frac{1}{2})$
C	(2, 3)
D	$(2\frac{1}{2}, 3\frac{1}{2})$
E	$(2\frac{1}{2}, 2\frac{1}{2})$
F	$(3\frac{1}{2}, 2\frac{1}{2})$
G	(3, 2)
H	$(3\frac{1}{2}, 1\frac{1}{2})$



coordinate plane

Name _____ Date _____

1. The line graph below tracks the rain accumulation, measured every half hour, during a rainstorm that began at 2:00 p.m. and ended at 7:00 p.m. Use the information in the graph to answer the questions that follow.



a. How many inches of rain fell during this five-hour period?

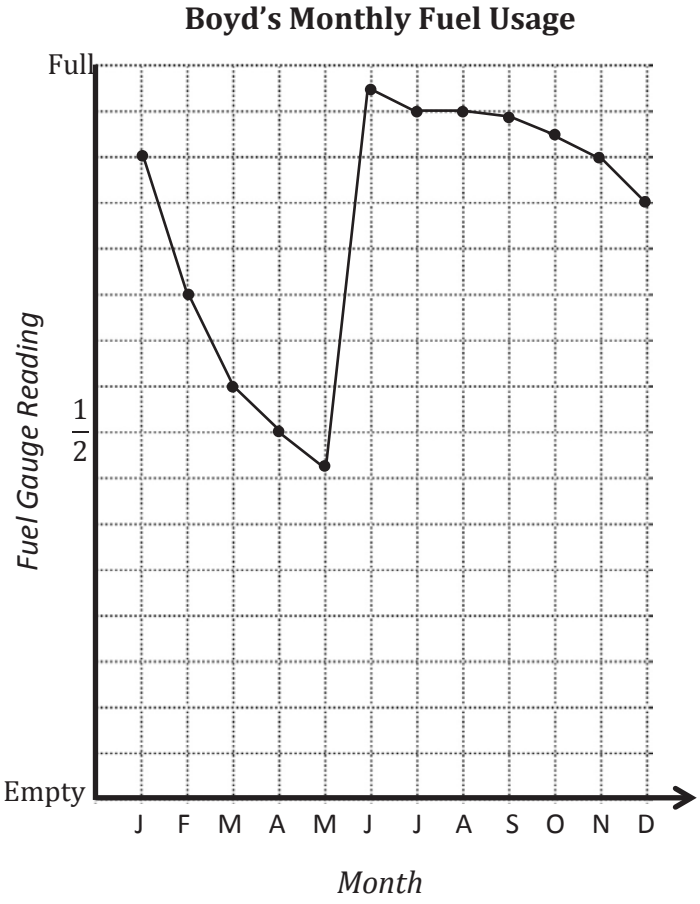
b. During which half-hour period did $\frac{1}{2}$ inch rain fall? Explain how you know.

c. During which half-hour period did rain fall most rapidly? Explain how you know.

d. Why do you think the line is horizontal between 3:30 p.m. and 4:30 p.m.?

e. For every inch of rain that fell here, a nearby community in the mountains received a foot and a half of snow. How many inches of snow fell in the mountain community between 5:00 p.m. and 7:00 p.m.?

2. Mr. Boyd checks the gauge on his home's fuel tank on the first day of every month. The line graph to the right was created using the data he collected.



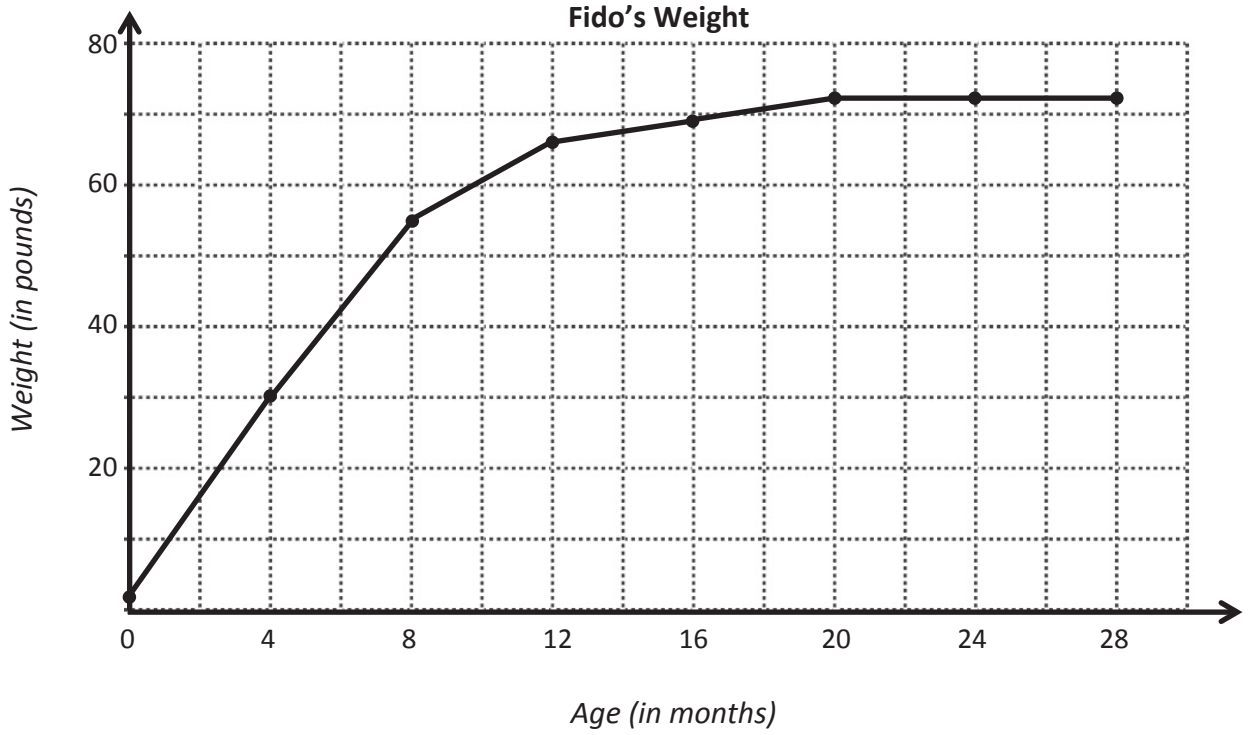
a. According to the graph, during which month(s) does the amount of fuel decrease most rapidly?

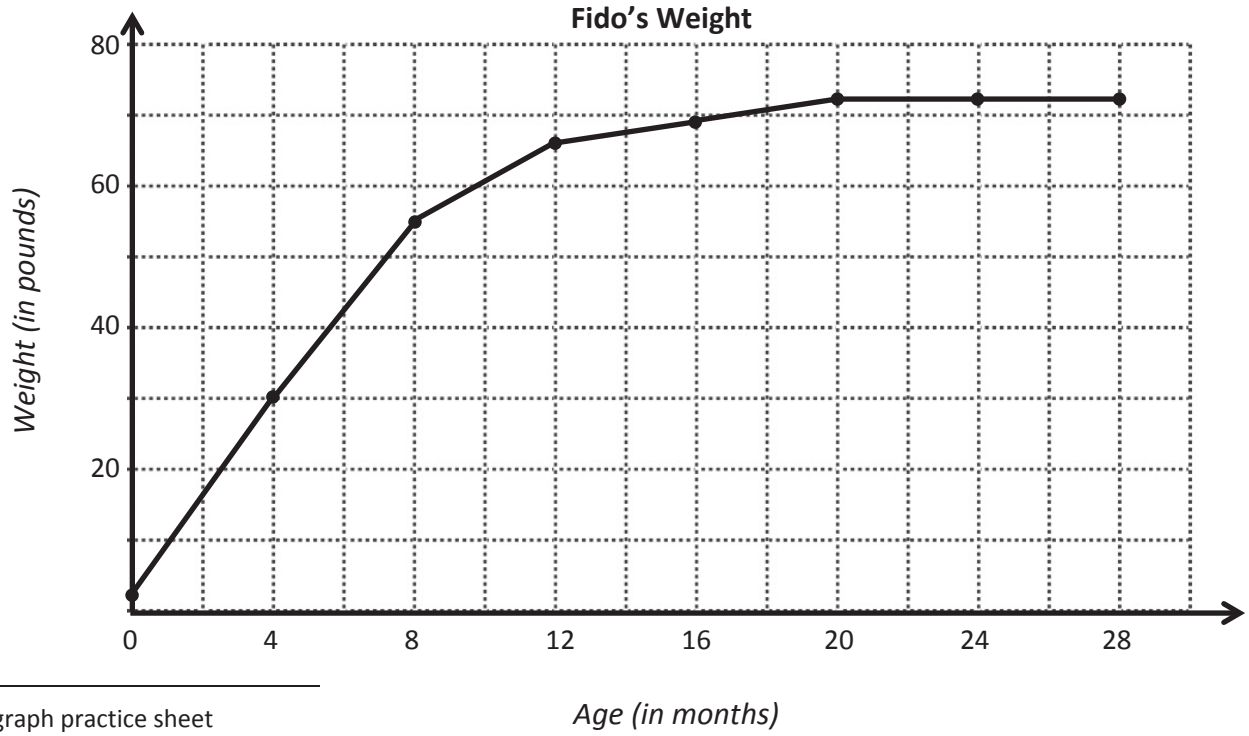
b. The Boyds took a month-long vacation. During which month did this most likely occur? Explain how you know using the data in the graph.

c. Mr. Boyd's fuel company filled his tank once this year. During which month did this most likely occur? Explain how you know.

d. The Boyd family's fuel tank holds 284 gallons of fuel when full. How many gallons of fuel did the Boyds use in February?

e. Mr. Boyd pays $3.54 per gallon of fuel. What is the cost of the fuel used in February and March?

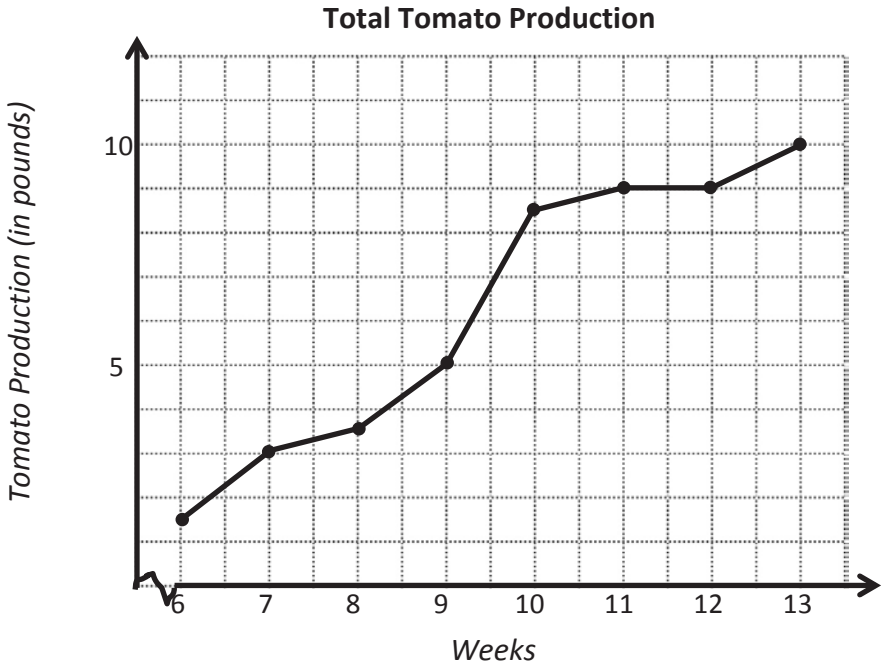




line graph practice sheet

Name _____ Date _____

1. The line graph below tracks the total tomato production for one tomato plant. The total tomato production is plotted at the end of each of 8 weeks. Use the information in the graph to answer the questions that follow.



a. How many pounds of tomatoes did this plant produce at the end of 13 weeks?

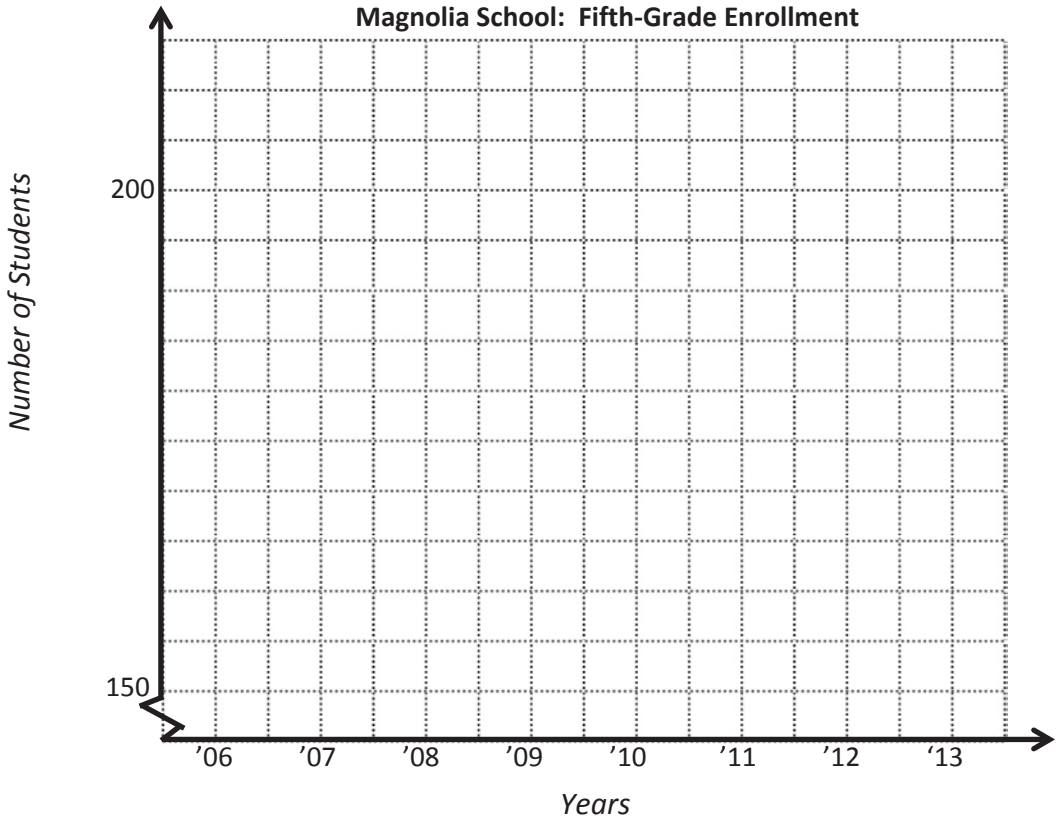
b. How many pounds of tomatoes did this plant produce from Week 7 to Week 11? Explain how you know.

c. Which one-week period showed the greatest change in tomato production? The least? Explain how you know.

d. During Weeks 6–8, Jason fed the tomato plant just water. During Weeks 8–10, he used a mixture of water and Fertilizer A, and in Weeks 10–13, he used water and Fertilizer B on the tomato plant. Compare the tomato production for these periods of time.

2. Use the story context below to sketch a line graph. Then, answer the questions that follow.

   The number of fifth-grade students attending Magnolia School has changed over time. The school opened in 2006 with 156 students in the fifth grade. The student population grew the same amount each year before reaching its largest class of 210 students in 2008. The following year, Magnolia lost one-seventh of its fifth graders. In 2010, the enrollment dropped to 154 students and remained constant in 2011. For the next two years, the enrollment grew by 7 students each year.



   a. How many more fifth-grade students attend Magnolia in 2009 than in 2013?

   b. Between which two consecutive years was there the greatest change in student population?

   c. If the fifth-grade population continues to grow in the same pattern as in 2012 and 2013, in what year will the number of students match 2008's enrollment?

Student _____ Team _____ Date _____ Problem 1

Pierre's Paper

Pierre folded a square piece of paper vertically to make two rectangles. Each rectangle had a perimeter of 39 inches. How long is each side of the original square? What is the area of the original square? What is the area of one of the rectangles?

Student _____ Team _____ Date _____ Problem 2

Shopping with Elise

Elise saved $184. She bought a scarf, a necklace, and a notebook. After her purchases, she still had $39.50. The scarf cost three-fifths the cost of the necklace, and the notebook was one-sixth as much as the scarf. What was the cost of each item? How much more did the necklace cost than the notebook?

Student _____ Team _____ Date _____ Problem 3

The Hewitt's Carpet

The Hewitt family is buying carpet for two rooms. The dining room is a square that measures 12 feet on each side. The den is 9 yards by 5 yards. Mrs. Hewitt has budgeted $2,650 for carpeting both rooms. The green carpet she is considering costs $42.75 per square yard, and the brown carpet's price is $4.95 per square foot. What are the ways she can carpet the rooms and stay within her budget?

Student _____ Team _____ Date _____ Problem 4

AAA Taxi

AAA Taxi charges $1.75 for the first mile and $1.05 for each additional mile. How far could Mrs. Leslie travel for $20 if she tips the cab driver $2.50?

Student _____ Team _____ Date _____ Problem 5

Pumpkins and Squash

Three pumpkins and two squash weigh 27.5 pounds. Four pumpkins and three squash weigh 37.5 pounds. Each pumpkin weighs the same as the other pumpkins, and each squash weighs the same as the other squash. How much does each pumpkin weigh? How much does each squash weigh?

Student _____ Team _____ Date _____ Problem 6

Toy Cars and Trucks

Henry had 20 convertibles and 5 trucks in his miniature car collection. After Henry's aunt bought him some more miniature trucks, Henry found that one-fifth of his collection consisted of convertibles. How many trucks did his aunt buy?

Student _____ Team _____ Date _____ Problem 7

Pairs of Scouts

Some girls in a Girl Scout troop are pairing up with some boys in a Boy Scout troop to practice square dancing. Two-thirds of the girls are paired with three-fifths of the boys. What fraction of the scouts is square dancing?

(Each pair is one Girl Scout and one Boy Scout. The pairs are only from these two troops.)

Student _____ Team _____ Date _____ Problem 8

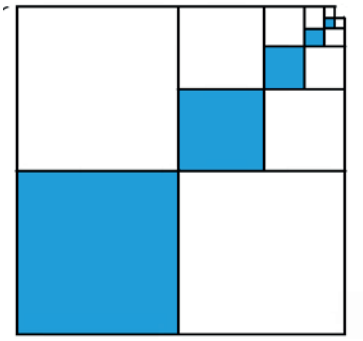
Sandra's Measuring Cups

Sandra is making cookies that require $5\frac{1}{2}$ cups of oatmeal. She has only two measuring cups: a one-half cup and a three-fourths cup. What is the smallest number of scoops that she could make in order to get $5\frac{1}{2}$ cups?

Student _____ Team _____ Date _____ Problem 9

Blue Squares

The dimensions of each successive blue square pictured to the right are half that of the previous blue square. The lower left blue square measures 6 inches by 6 inches.



a. Find the area of the shaded part.

b. Find the total area of the shaded and unshaded parts.

c. What fraction of the figure is shaded?

Name _____ Date _____

1. For each written phrase, write a numerical expression, and then evaluate your expression.

a. Three fifths of the sum of thirteen and six

Numerical expression:

Solution:

b. Subtract four thirds from one seventh of sixty-three

Numerical expression:

Solution:

c. Six copies of the sum of nine fifths and three

Numerical expression:

Solution:

d. Three fourths of the product of four fifths and fifteen

Numerical expression:

Solution:

2. Write at least 2 numerical expressions for each phrase below. Then, solve.

   a. Two thirds of eight

   b. One sixth of the product of four and nine

3. Use <, >, or = to make true number sentences without calculating. Explain your thinking.

   a. $217 \times \left(42 + \frac{48}{5}\right)$ ◯ $(217 \times 42) + \frac{48}{5}$

   b. $\left(687 \times \frac{3}{16}\right) \times \frac{7}{12}$ ◯ $\left(687 \times \frac{3}{16}\right) \times \frac{3}{12}$

   c. $5 \times 3.76 + 5 \times 2.68$ ◯ 5×6.99

Name _____ Date _____

1. Use the RDW process to solve the word problems below.

   a. Julia completes her homework in an hour. She spends $\frac{7}{12}$ of the time doing her math homework and $\frac{1}{6}$ of the time practicing her spelling words. The rest of the time she spends reading. How many minutes does Julia spend reading?

   b. Fred has 36 marbles. Elise has $\frac{8}{9}$ as many marbles as Fred. Annika has $\frac{3}{4}$ as many marbles as Elise. How many marbles does Annika have?

2. Write and solve a word problem that might be solved using the expressions in the chart below.

Expression	Word Problem	Solution
$\frac{2}{3} \times 18$		
$(26 + 34) \times \frac{5}{6}$		
$7 - \left(\frac{5}{12} + \frac{1}{2}\right)$		

Name _____ Date _____

1. Answer the following questions about fluency.

   a. What does being fluent with a math skill mean to you?

   b. Why is fluency with certain math skills important?

   c. With which math skills do you think you should be fluent?

   d. With which math skills do you feel most fluent? Least fluent?

   e. How can you continue to improve your fluency?

2. Use the chart below to list skills from today's activities with which you are fluent.

Fluent Skills

3. Use the chart below to list skills we practiced today with which you are less fluent.

Skills to Practice More

A quadrilateral with two pairs of equal sides that are also adjacent.	An angle that turns through $\frac{1}{360}$ of a circle.	A quadrilateral with at least one pair of parallel lines.	A closed figure made up of line segments.
Measurement of space or capacity.	A quadrilateral with opposite sides that are parallel.	An angle measuring 90 degrees.	The union of two different rays sharing a common vertex.
The number of square units that cover a two-dimensional shape.	Two lines in a plane that do not intersect.	The number of adjacent layers of the base that form a rectangular prism.	A three-dimensional figure with six square sides.
A quadrilateral with four 90-degree angles.	A polygon with 4 sides and 4 angles.	A parallelogram with all equal sides.	Cubes of the same size used for measuring.
Two intersecting lines that form 90-degree angles.	A three-dimensional figure with six rectangular sides.	A three-dimensional figure.	Any flat surface of a 3-D figure.
A line that cuts a line segment into two equal parts at 90 degrees.	Squares of the same size, used for measuring.	A rectangular prism with only 90-degree angles.	One face of a 3-D solid, often thought of as the surface upon which the solid rests.

Base	Volume of a Solid	Cubic Units	Kite
Height	One-Degree Angle	Face	Trapezoid
Right Rectangular Prism	Perpendicular Bisector	Cube	Area
Perpendicular Lines	Rhombus	Parallel Lines	Angle
Polygon	Rectangular Prism	Parallelogram	Rectangle
Right Angle	Quadrilateral	Solid Figure	Square Units

Attribute Buzz:

Number of players: 2

Description: Players place geometry vocabulary cards facedown in a pile and, as they select cards, name the attributes of each figure within 1 minute.

- Player A flips the first card and says as many attributes as possible within 30 seconds.
- Player B says, "Buzz," when or if Player A states an incorrect attribute or time is up.
- Player B explains why the attribute is incorrect (if applicable) and can then start listing attributes about the figure for 30 seconds.
- Players score a point for each correct attribute.
- Play continues until students have exhausted the figure's attributes. A new card is selected, and play continues. The player with the most points at the end of the game wins.

Concentration:

Number of players: 2–6

Description: Players persevere to match term cards with their definition and description cards.

- Create two identical arrays side by side: one of term cards and one of definition and description cards.
- Players take turns flipping over pairs of cards to find a match. A match is a vocabulary term and its definition or description card. Cards keep their precise location in the array if not matched. Remaining cards are not reconfigured into a new array.
- After all cards are matched, the player with the most pairs is the winner.

Three Questions to Guess My Term!

Number of players: 2–4

Description: A player selects and secretly views a term card. Other players take turns asking yes or no questions about the term.

- Players can keep track of what they know about the term on paper.
- Only yes or no questions are allowed. ("What kind of angles do you have?" is not allowed.)
- A final guess must be made after 3 questions but may be made sooner. Once a player says, "This is my guess," no more questions may be asked by that player.
- If the term is guessed correctly after 1 or 2 questions, 2 points are earned. If all 3 questions are used, only 1 point is earned.
- If no player guesses correctly, the card holder receives the point.
- The game continues as the player to the card holder's left selects a new card and questioning begins again.
- The game ends when a player reaches a predetermined score.

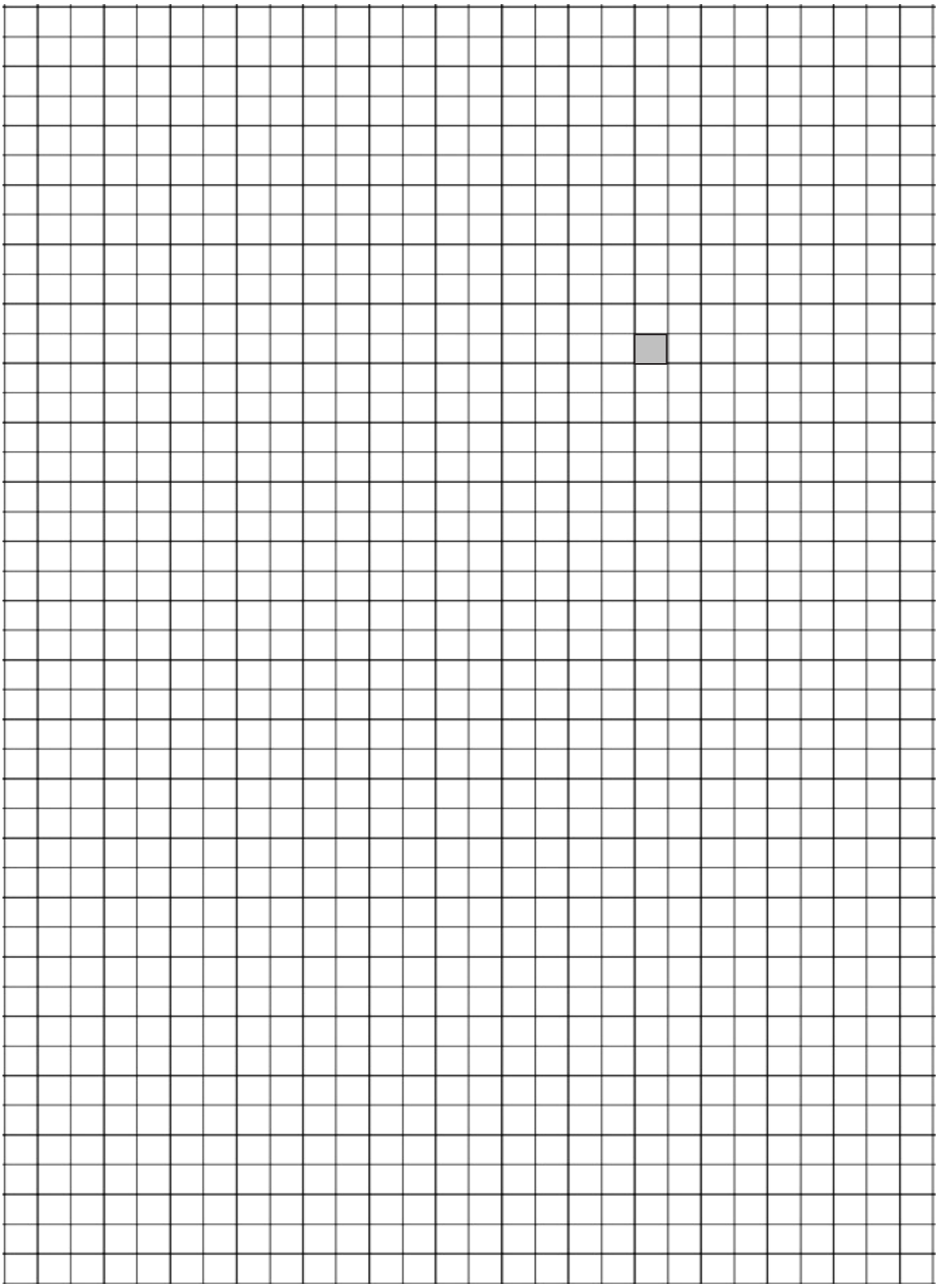
Bingo:

Number of players: 4–whole class

Description: Players match definitions to terms to be the first to fill a row, column, or diagonal.

- Players write a vocabulary term in each box of the math bingo game template. Each term should be used only once. The box that says "Math Bingo" is a free space.
- Players place the filled-in math bingo template in their personal white boards.
- One person is the caller and reads the definition on a vocabulary card.
- Players cross off or cover the term that matches the definition.
- "Bingo!" is called when 5 vocabulary terms in a row are crossed off diagonally, vertically, or horizontally. The free space counts as 1 box toward the needed 5 vocabulary terms.
- The first player to have 5 in a row reads each crossed-off word, states the definition, and gives a description or an example of each word. If all words are reasonably explained as determined by the caller, the player is declared the winner.

Name _____ Date _____



Name _____ Date _____

1. Ashley decides to save money this year, but she wants to build it up over the year. She decides to start with $1.00 and add 1 more dollar each week of the year. Complete the table to show how much she will have saved by the end of the year.

Week	Add	Total
1	$1.00	$1.00
2	$2.00	$3.00
3	$3.00	$6.00
4	$4.00	$10.00
5		
6		
7		
8		
9		
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11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Week	Add	Total
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
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41		
42		
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2. Carly wants to save money, too, but she has to start with the smaller denomination of quarters. Complete the second chart to show how much she will have saved by the end of the year if she adds a quarter more each week. Try it yourself, if you can and want to!

Week	Add	Total
1	$0.25	$0.25
2	$0.50	$0.75
3	$0.75	$1.50
4	$1.00	$2.50
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Week	Add	Total
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
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41		
42		
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3. David decides he wants to save even more money than Ashley did. He does so by adding the next Fibonacci number instead of adding $1.00 each week. Use your calculator to fill in the chart and find out how much money he will have saved by the end of the year. Is this realistic for most people? Explain your answer.

Week	Add	Total
1	$1	$1
2	$1	$2
3	$2	$4
4	$3	$7
5	$5	$12
6	$8	$20
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Week	Add	Total
27		
28		
29		
30		
31		
32		
33		
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Name _____ Date _____

Record the dimensions of your boxes and lid below. Explain your reasoning for the dimensions you chose for Box 2 and the lid.

BOX 1 (Can hold Box 2 inside.)

The dimensions of Box 1 are _____ × _____ × _____ .

Its volume is _____ .

BOX 2 (Fits inside of Box 1.)

The dimensions of Box 2 are _____ × _____ × _____ .

Reasoning:

LID (Fits snugly over Box 1 to protect the contents.)

The dimensions of the lid are _____ × _____ × _____ .

Reasoning:

1. What steps did you take to determine the dimensions of the lid?

2. Find the volume of Box 2. Then, find the difference in the volumes of Boxes 1 and 2.

3. Imagine Box 3 is created such that each dimension is 1 cm less than that of Box 2. What would the volume of Box 3 be?

Name _____ Date _____

I reviewed _____'s work.

Use the chart below to evaluate your friend's two boxes and lid. Measure and record the dimensions, and calculate the box volumes. Then, assess suitability, and suggest improvements in the adjacent columns.

Dimensions and Volume	Is the box or lid suitable? Explain.	Suggestions for Improvement
BOX 1 dimensions: Total volume:		
BOX 2 dimensions: Total volume:		
LID dimensions:		

Video tutorials: http://bit.ly/eurekapusd
Info for parents: http://bit.ly/pusdmath