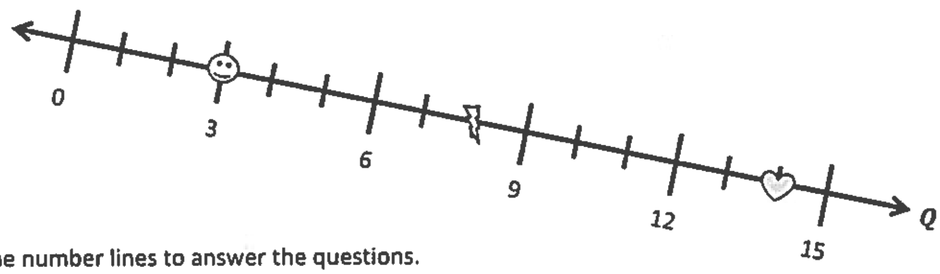
# MSP

# Grade 5 Module 6

# Lesson Refreshers
# &
# Homework Starters

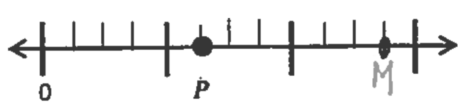
Name ______________________ Date ____________

1. Answer the following questions using number line $Q$, below.
   a. What is the coordinate, or the distance from the origin, of the ? ________
   b. What is the coordinate of ? ________
   c. What is the coordinate of ? ________
   d. What is the coordinate at the midpoint of and ? ________




2. Use the number lines to answer the questions.

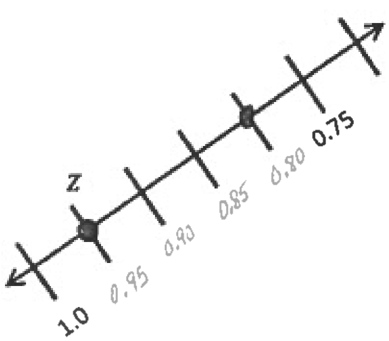

Plot $T$ so its distance from the origin is 10.




Plot $M$ so its distance is $\frac{11}{4}$ from the origin. What is the distance from $P$ to $M$?

$\frac{11}{4} - \frac{5}{4} = \frac{6}{4}$

The distance from P to M is $\frac{6}{4}$.



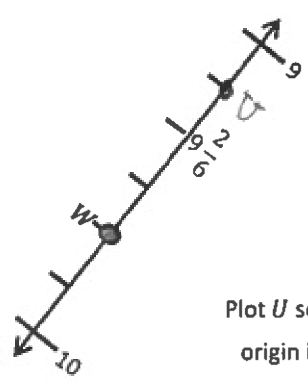

Plot a point that is 0.15 closer to the origin than $Z$.

There are 5 spaces between 1.0 and 0.75, therefore find difference

$1.00 - 0.75 = 0.25$

$0.25 \div 5 = .05$ ← the Interval

$0.95 - 0.15 = 0.80$




Plot $U$ so that its distance from the origin is $\frac{3}{6}$ closer than that of $W$.

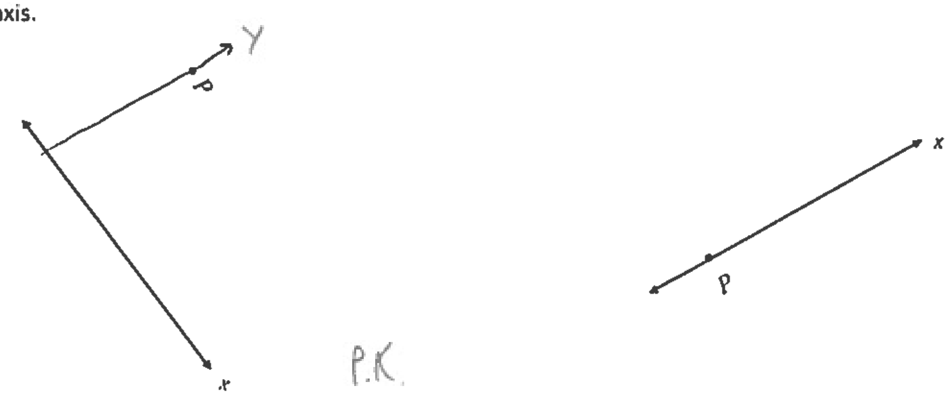
Note the intervals are $\frac{1}{6}$ long.

Barnes

Name ______________________________ Date ______________

1.

a. Use a set-square to draw a line perpendicular to the $x$-axis through point $P$. Label the new line as the $y$-axis.



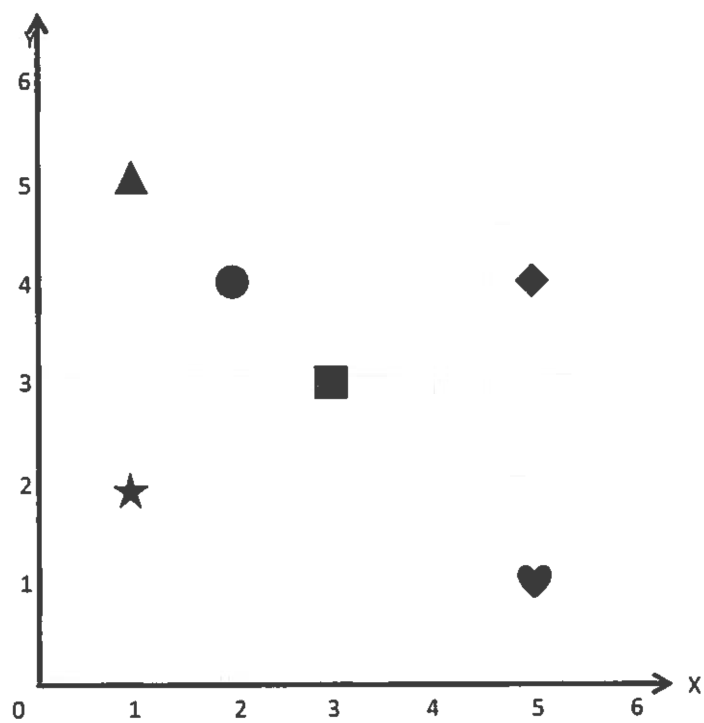

P.K.

b. Choose one of the sets of perpendicular lines above and create a coordinate plane. Mark 5 units on each axis, and label them as whole numbers.

2. Use the coordinate plane to answer.

a. Name the shape at each location.

| $x$-coordinate | $y$-coordinate | Shape |
|---|---|---|
| 2 | 4 | circle |
| 5 | 4 | |
| 1 | 5 | |
| 5 | 1 | heart |




PK,

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

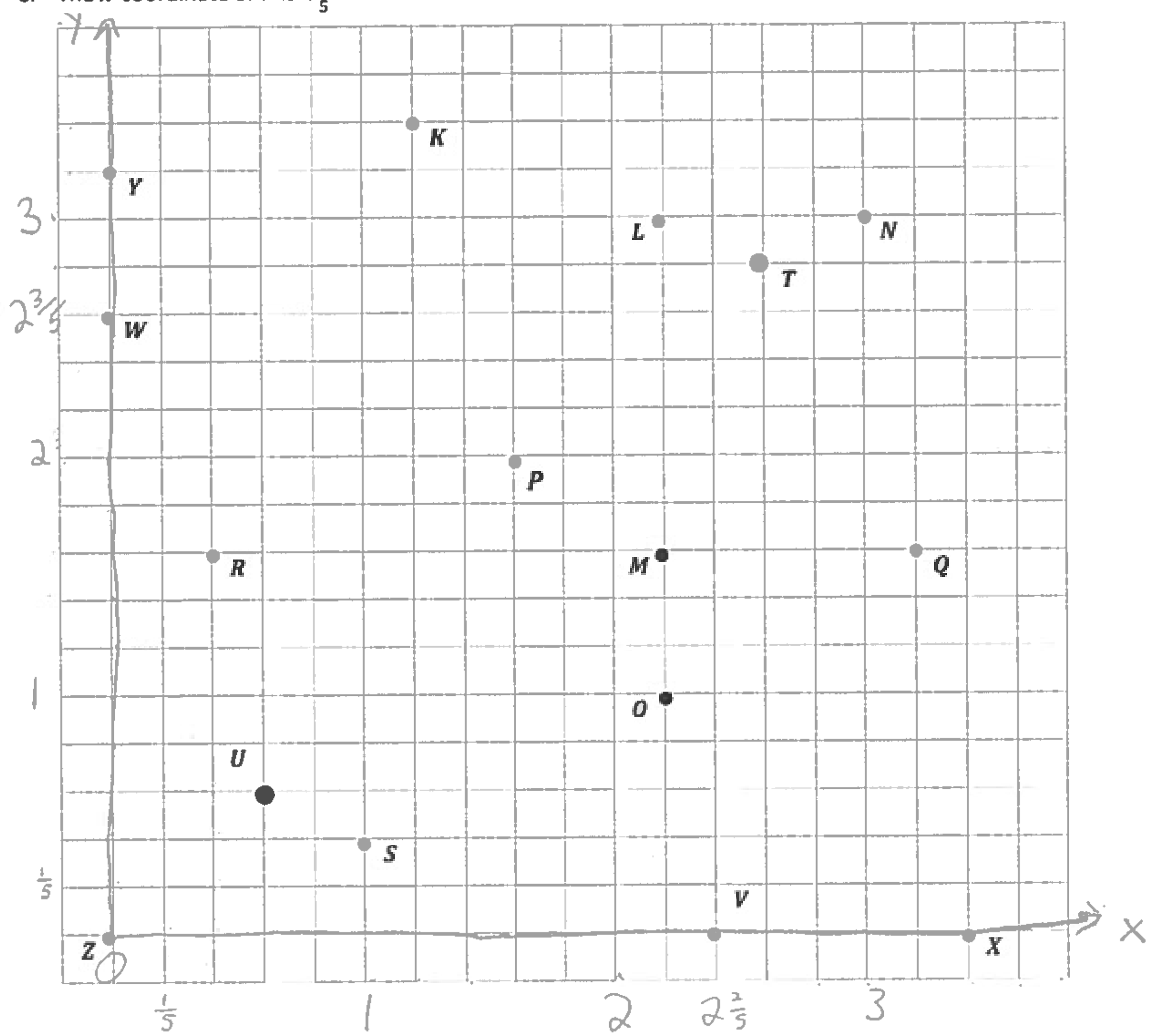
c. Which shape has the same $x$- and $y$-coordinate?

Square

PK

Name ____________________ Date ____________

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




PK

2. For all of the following problems, consider the points $K$ through $X$ on the previous page.

   a. Identify all of the points that have a $y$-coordinate of $1\frac{3}{5}$. R, M, Q

   PK

   b. Identify all of the points that have an $x$-coordinate of $2\frac{1}{5}$. O, M, L

   c. Which point is $1\frac{3}{5}$ units above the $x$-axis *and* $3\frac{1}{5}$ units to the right of the $y$-axis? Name the point and give its coordinate pair.

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

   e. Which point is located $\frac{2}{5}$ units along the $x$-axis?

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

   $T$: ______ $U$: ______ $S$: ______ $K$: ______

   g. Name the points located at the following coordinates.

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

   h. Plot a point whose $x$- and $y$-coordinates are equal. Label your point $E$.

   i. What is the name for the point on the plane where the two axes intersect? ________ Give the coordinates for this point. ________

   j. Plot the following points.

   $A$: $(1\frac{1}{5}, 1)$ $B$: $(\frac{1}{5}, 3)$ $C$: $(2\frac{4}{5}, 2\frac{2}{5})$ $D$: $(1\frac{1}{5}, 0)$

   k. What is the distance between $L$ and $N$, or $LN$?

   l. What is the distance $MQ$?

   m. Would $RM$ be greater, less than, or equal to $LN + MQ$?

   n. Leslie was explaining how to plot points on the coordinate plane to a new student, but she left off some important information. Correct her explanation so that it is complete.

   "All you have to do is read the coordinates; for example, if it says (4, 7), count four, then seven, and put a point where the two grid lines intersect."

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. (3.2, 7) and (5, 7) b. (8, 8.4) and (8, 8.8) c. ($6\frac{1}{2}$, 12) and (6.2, 11)

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. (3.2, 8.5) and (3.22, 24) b. ($13\frac{1}{3}$, $4\frac{2}{3}$) and ($13\frac{1}{3}$, 7) c. (2.9, 5.4) and (7.2, 5.4)

   ($13\frac{1}{3}$, 6) ($13\frac{1}{3}$, 9)

   To be parallel to the y-axis, the x-coordinates are the same.

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 $y$-axis.

   a. ______________ b. ______________ c. ______________

7. Leslie and Peggy are playing *Battleship* on axes labeled in halves. Presented in the table is a record of Peggy's guesses so far. What should she guess next? How do you know? Explain using words and pictures

| | |
|---|---|
| (5, 5) | miss |
| (4, 5) | hit |
| ($3\frac{1}{2}$, 5) | miss |
| ($4\frac{1}{2}$, 5) | miss |

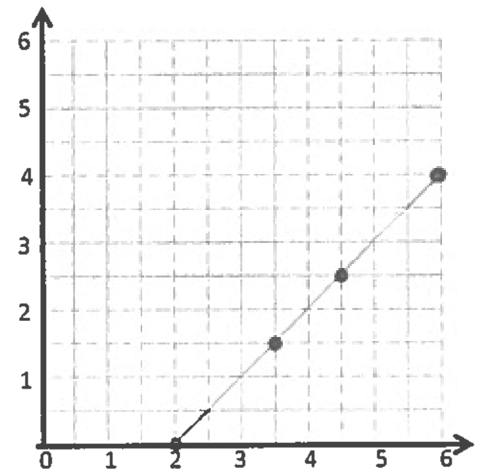


PT

Name ______________________________ Date ______________

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

| $x$ | $y$ | $(x, y)$ |
|---|---|---|
| 2 | 0 | (2, 0) |
| $3\frac{1}{2}$ | $1\frac{1}{2}$ | $(3\frac{1}{2}, 1\frac{1}{2})$ |
| $4\frac{1}{2}$ | $2\frac{1}{2}$ | $(4\frac{1}{2}, 2\frac{1}{2})$ |
| 6 | 4 | (6, 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 of points on this line.

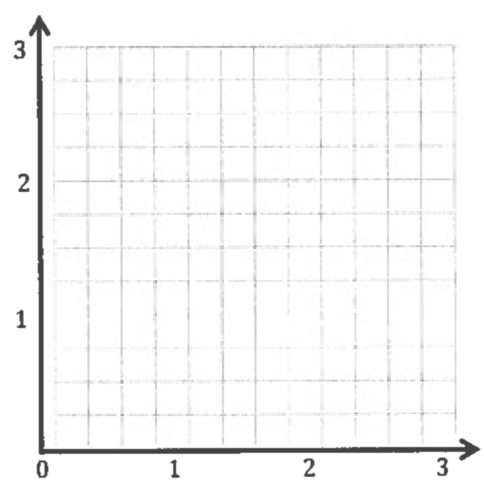
rule: x minus 2 = y

c. Name two other points that are also on this line. $(2\frac{1}{2}, \frac{1}{2})$ (4, 2)

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

Ph

| $x$ | $y$ | $(x, y)$ |
|---|---|---|
| 0 | 0 | |
| $\frac{1}{4}$ | $\frac{3}{4}$ | |
| $\frac{1}{2}$ | $1\frac{1}{2}$ | |
| 1 | 3 | |



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

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

c. Name two other points that are also on this line.

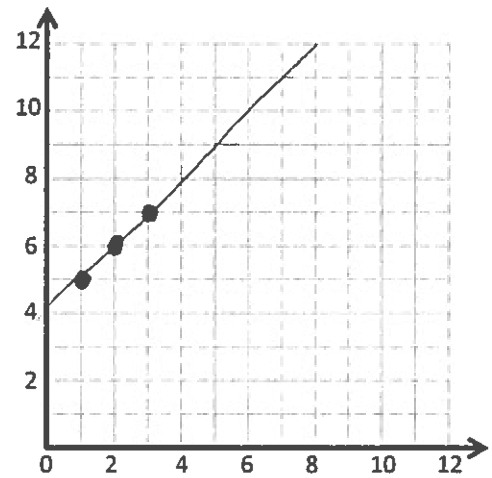
__________ __________

Name ______________________ Date ______________

1. Complete this table such that each $y$-coordinate is 4 more than the corresponding $x$-coordinate.

Pick a number for X, Add 4 to it. This is the y-coordinate.

| $x$ | $y$ | $(x, y)$ |
|---|---|---|
| 1 | 5 | (1, 5) |
| 2 | 6 | (2, 6) |
| 3 | 7 | (3, 7) |



a. Plot each point on the coordinate plane.

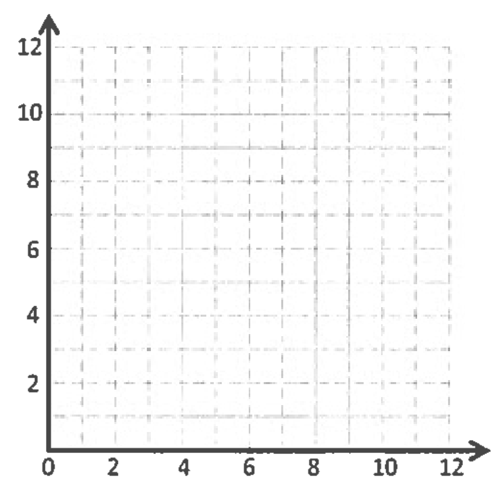
b. Use a straightedge to construct a line connecting these points.

c. Give the coordinates of 2 other points that fall on this line with $x$-coordinates greater than 18.

(19, 23) and (20, 24).

2. Complete this table such that each $y$-coordinate is 2 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.

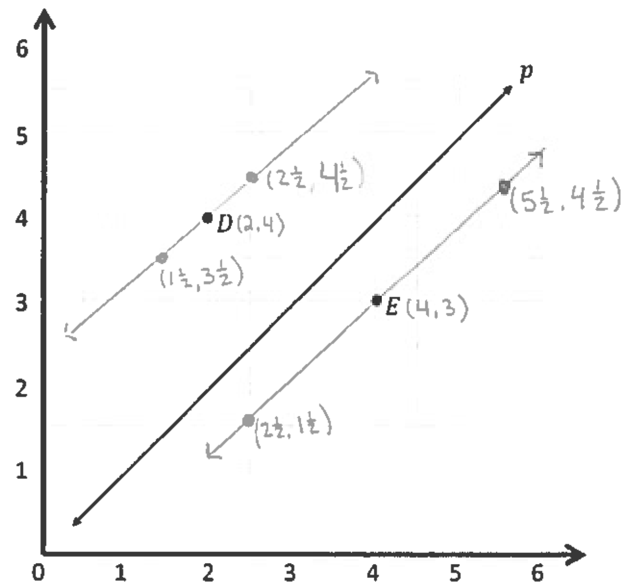
(_____, _____) and (_____, _____).



PT

Name ______________________________ Date ________________

1. Use the coordinate plane to complete the following tasks.
   a. Line $p$ represents the rule *x and y are equal*.
   b. Construct a line, $d$, that is parallel to line $p$ and contains point $D$.
   c. Name 3 coordinates pairs on line $d$.




   d. Identify a rule to describe line $d$.

x plus 2 = y

   e. Construct a line, $e$, that is parallel to line $p$ and contains point $E$.
   f. Name 3 points on line $e$.

   g. Identify a rule to describe line $e$.

X minus 1 = y

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

line d and e are both parallel to line p.
line d has the rule:
x plus 2 = y
line e has the rule:
X minus 1 = y

Name ______________________ Date ____________

1. Complete the tables for the given rules.

Line $\ell$

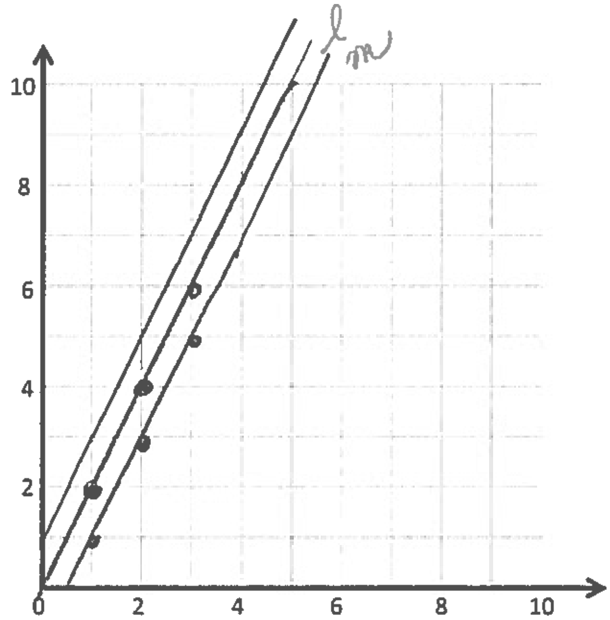
*Rule: Double $x$*

| $x$ | $y$ | $(x, y)$ |
|---|---|---|
| 1 | 2 | (1, 2) |
| 2 | 4 | (2, 4) |
| 3 | 6 | (3, 6) |

Line $m$

*Rule: Double $x$, then subtract 1*

| $x$ | $y$ | $(x, y)$ |
|---|---|---|
| 1 | 1 | (1, 1) |
| 2 | 3 | (2, 3) |
| 3 | 5 | (3, 5) |




a. Draw each line on the coordinate plane above.

b. Compare and contrast these lines.

Line $\ell$ and line $m$ are parallel.

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

The line would be parallel to $\ell$ and $m$.

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

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

a. Explain how you know.

$2 \times \frac{1}{2} = 1$ $1 + 1 = 2$

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

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

PT

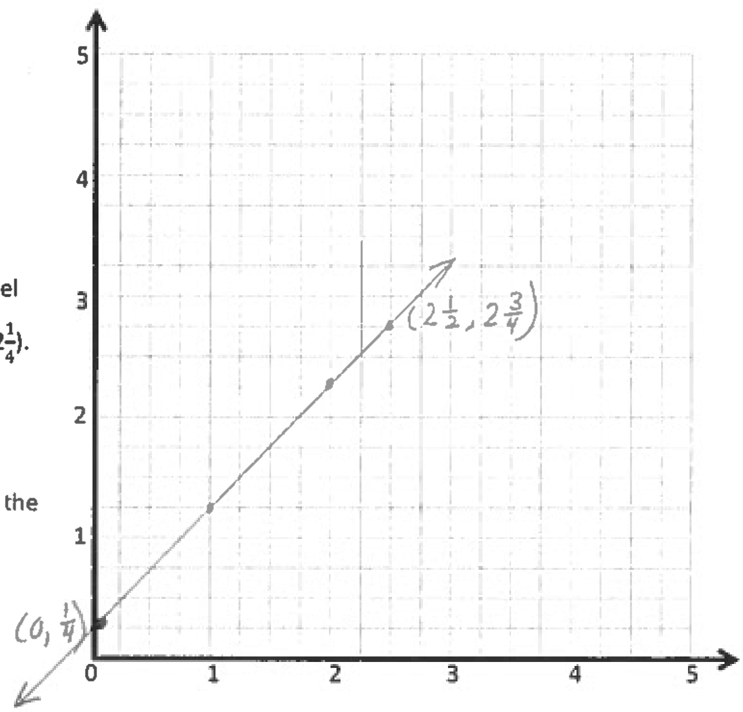
Name ______________________________ Date ______________

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

$y = x + \frac{1}{4}$

a. Identify 2 more points on this line, then draw it on the grid below.

| Point | $x$ | $y$ | $(x, y)$ |
|---|---|---|---|
| $B$ | 1 | $1\frac{1}{4}$ | $(1, 1\frac{1}{4})$ |
| $C$ | 2 | $2\frac{1}{4}$ | $(2, 2\frac{1}{4})$ |




b. Write a rule for a line that is parallel to $\overleftrightarrow{BC}$ and goes through point $(1, 2\frac{1}{4})$.

1. Give the rule for the line that contains the points $(1, 2\frac{1}{2})$ and $(2\frac{1}{2}, 2\frac{1}{2})$.

a. Identify 2 more points on this line, then draw it on the grid above.

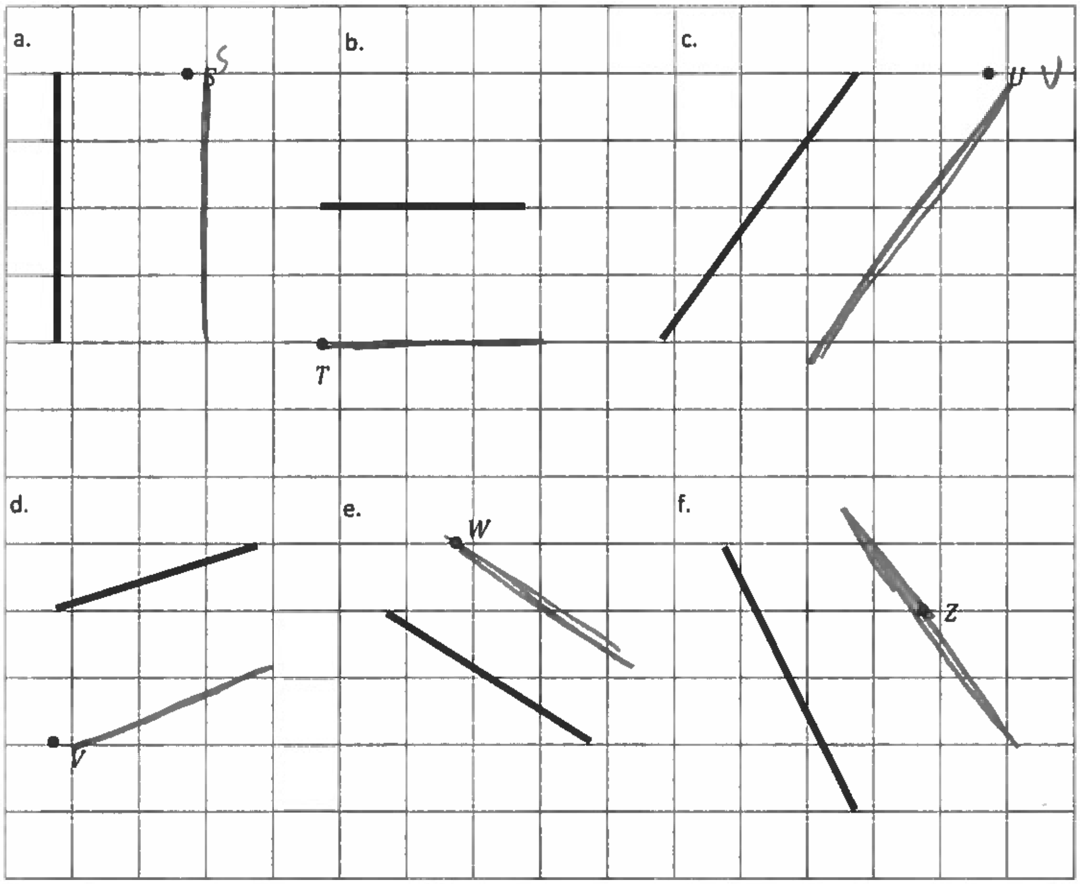
| Point | $x$ | $y$ | $(x, y)$ |
|---|---|---|---|
| $G$ | | | |
| $H$ | | | |

a. Write a rule for a line that is parallel to $\overleftrightarrow{GH}$.



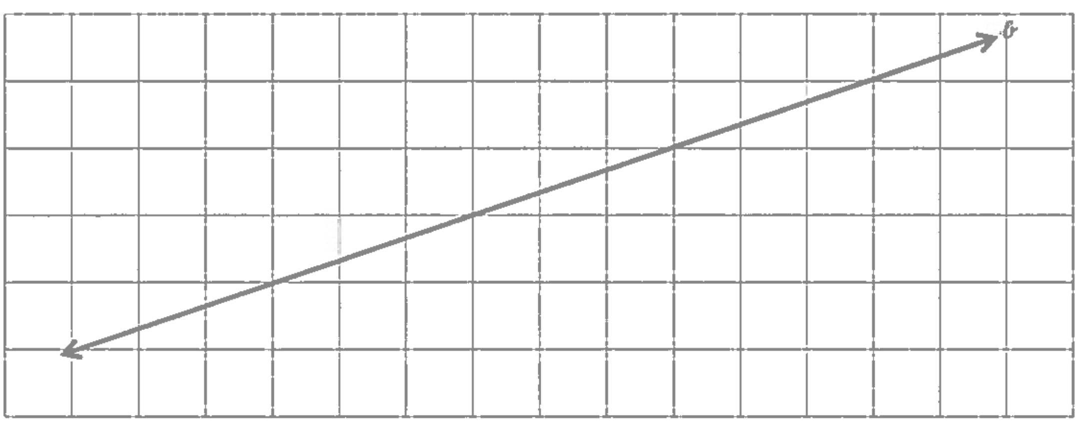
RK

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

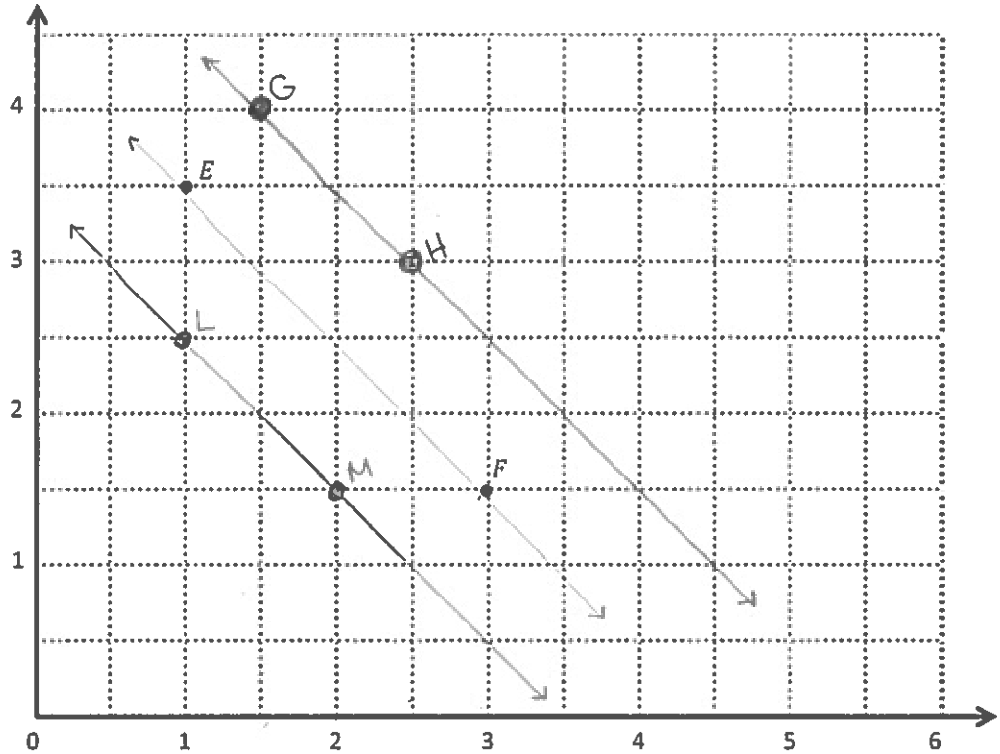



P. K.

4. Draw 2 different lines parallel to line *b*.



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




a. Identify the locations of $E$ and $F$. $E$: ( 1 , $3\frac{1}{2}$ ) $F$: ( 3 , $1\frac{1}{2}$ )

b. Draw $\overleftrightarrow{EF}$.

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

$L$: ( 1 , $2\frac{1}{2}$ ) $M$: ( 2 , $1\frac{1}{2}$ )

d. Draw $\overleftrightarrow{LM}$.

e. Explain the pattern you made use of when generating coordinate pairs for $L$ and $M$. x plus $1\frac{1}{2}$ = y

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

$G$: ($1\frac{1}{2}$, 4) $H$: ( $2\frac{1}{2}$ , 3 )

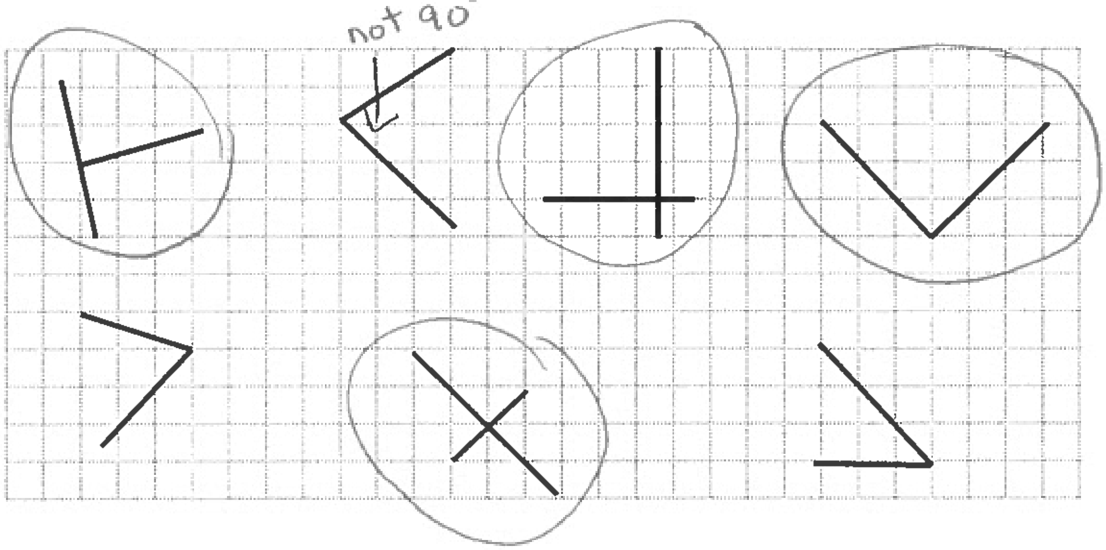
g. Explain how you chose the coordinates for $H$.

look @ x , then y

Name ______________________ Date ____________

1. Circle the pairs of segments that are perpendicular.

not 90°



PT

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

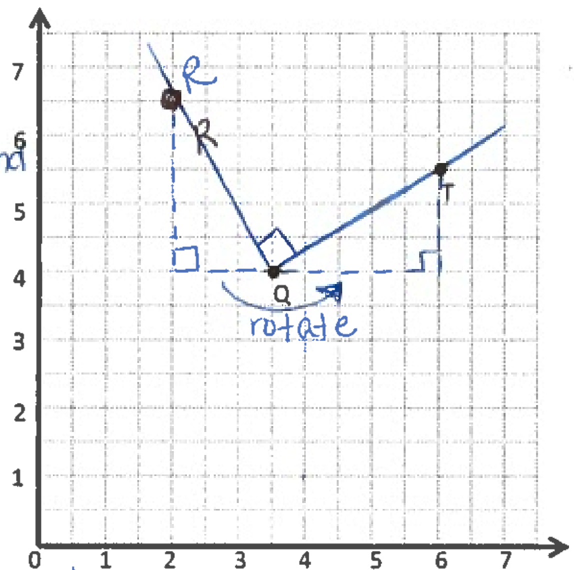
a. Draw $\overline{QT}$.

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.

I drew the triangle. Then I slid and rotated the triangle. The two acute angles form 90°. The angle between them, $\angle RQT$, will be 90°




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

$Q(3\frac{1}{2}, 4)$ Difference:

$T(6, 5\frac{1}{2})$ $x \rightarrow 6 - 3\frac{1}{2} = 2\frac{1}{2}$

$y \rightarrow 5\frac{1}{2} - 4 = 1\frac{1}{2}$

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

$R(2, 6\frac{1}{2})$ Difference: $x \rightarrow 3\frac{1}{2} - 2 = 1\frac{1}{2}$ $y \rightarrow 6\frac{1}{2} - 4 = 2\frac{1}{2}$

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?

The difference in the x-coordinates of Q and T was the same as the difference in the y-coordinates of Q and R. The difference in the y-coordinates of Q and T is the same as the difference in the x-coordinates of Q and R.

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

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

$G$: (1, 8) $H$: (7, 4)

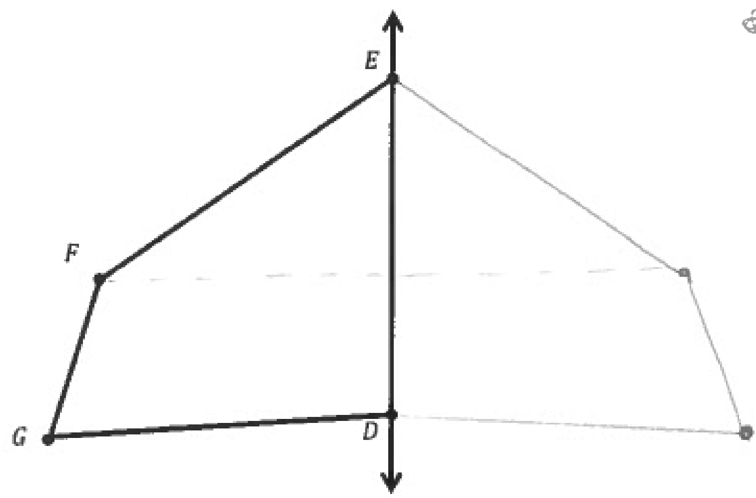
* $\overleftrightarrow{GH}$ would need to cross $\overleftrightarrow{EF}$ and a 90° angle.

MF

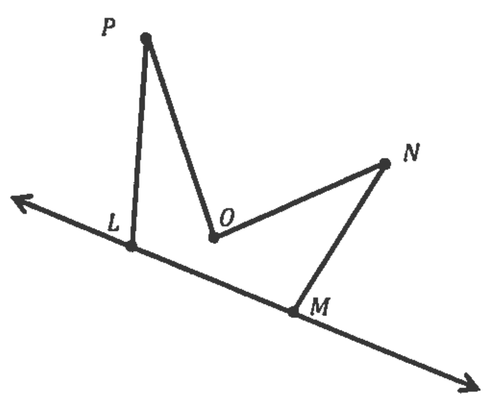
Name ______________________ Date ____________

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

$\overleftrightarrow{DE}$ separates the 2 symmetric ~~figures~~ quadrilaterals.




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

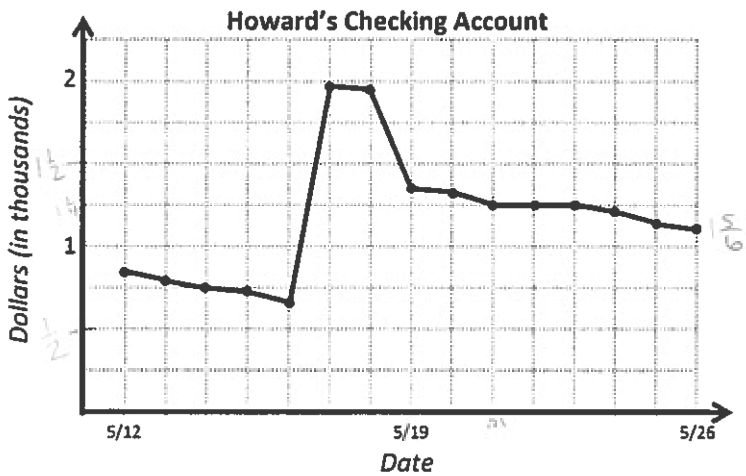





RK

Name ______________________ Date ____________

1. The line graph below tracks the balance of Howard's checking account, at the end of each day, between May 12 and May 26. Use the information in the graph to answer the questions that follow.




a. About how much money does Howard have in his checking account on May 21?

$1\frac{1}{4}$ thousand dollars = \$1,250

b. If Howard spends \$250 from his checking account on May 26, about how much money will he have left in his account?

$1\frac{5}{6} \approx$ \$875

c. Explain what happened with Howard's money between May 21 and May 23.

It stayed the same, he did not earn or spend any \$

d. Howard received a payment from his job that went directly into his checking account. On which day did this most likely occur? Explain how you know.

5/16 bc his amount of \$ increased (line up)

e. Howard bought a new television during the time shown in the graph. On which day did this most likely occur? Explain how you know.

5/18 bc his amount of \$ decreased (line down)

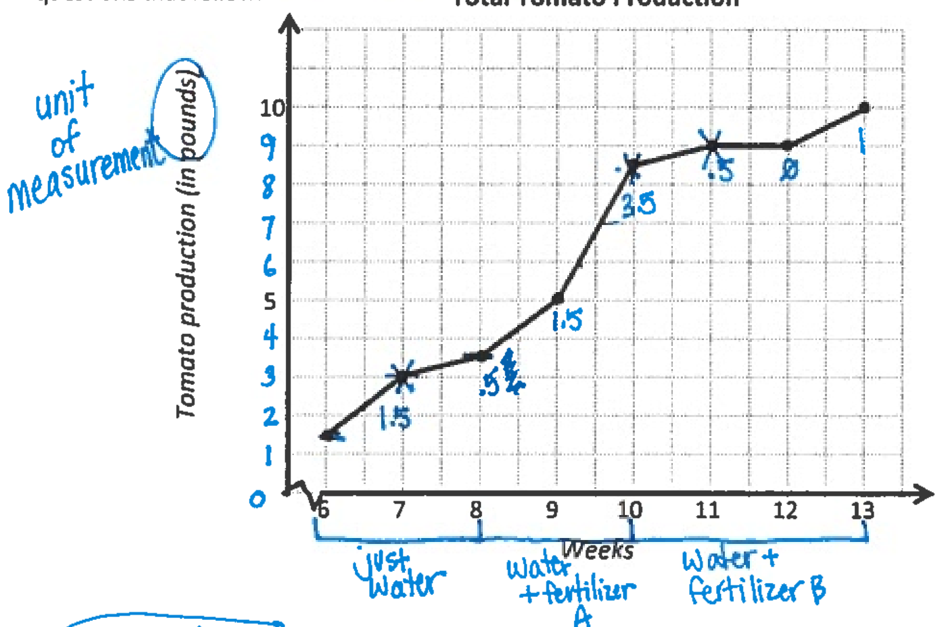


RK

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.

**Total Tomato Production**




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

This tomato plant produced 10 poundsof tomatoes.

b. How many pounds of tomatoes did this plant produce from Week 7 to Week 11? Explain how you know. At week 7 the plant produced 3 lbs, week 11 it had produced 9 lbs. From one week to another means you have to find the difference. 11 − 7 = 4. The plant produced 4 lbs. of tomatoes between weeks 7 and 11.

c. Which one-week period showed the greatest change in tomato production? The least? Explain how you know. The greatest change was between week 9 and week 10 and was 3.5 lbs. There was no change or the least change between week 11 and week 12.

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.

| Additives | growth +/− | weeks |
|---|---|---|
| just water | 1.5 + .5 = 2.0 lbs. | 6 − 8 |
| water + F.A. | 1.5 + 3.5 = 5.0 lbs | 8 − 10 |
| water + F.B. | .5 + 0 + 1 = 1.5 lbs | 10 − 13 |

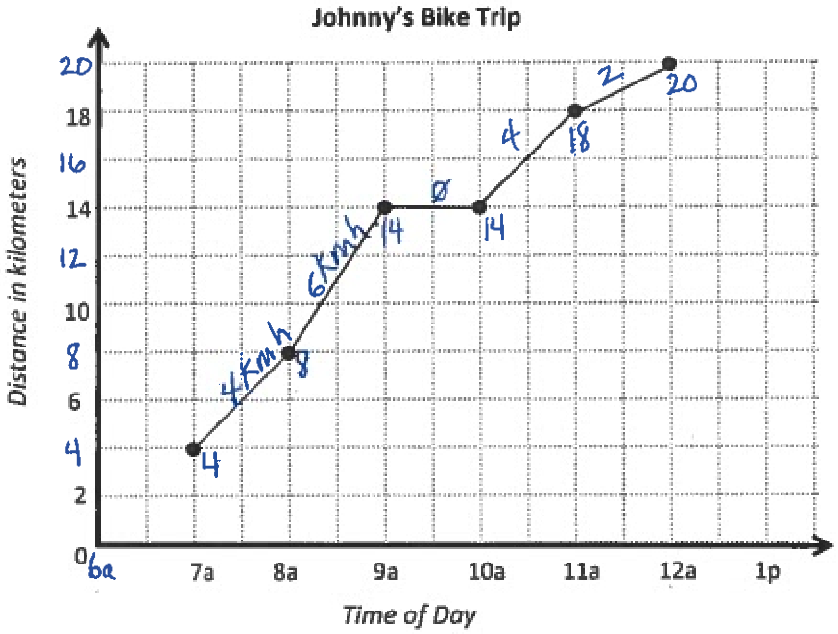


LAS

Name ______________________________ Date ______________

1. Use the graph to answer the questions.

   Johnny left his home at 6 a.m. and kept track of the number of kilometers he traveled at the end of each hour of his trip. He recorded the data in a line graph.




   a. How far did Johnny travel in all? How long did it take?

      Johnny traveled 20 Km in all. It took 6 hours.

   b. Johnny took a one-hour break to have a snack and take some pictures. What time did he stop? How do you know? He Stopped at 9 am. I know because the distance he traveled stopped moving for that hour.

   c. Did Johnny cover more distance before his break or after? Explain.

      Before the break Johnny covered 14 Km. After the break he covered 6 more km. The graph shows that at 9am he had traveled 14. The difference between the total of 20 Km and the 14 is 6 Km. 14 > 6

   d. Between which two hours did Johnny ride 4 kilometers?

      Between 7-8am and between 10-11am Johnny rode 4 Km.

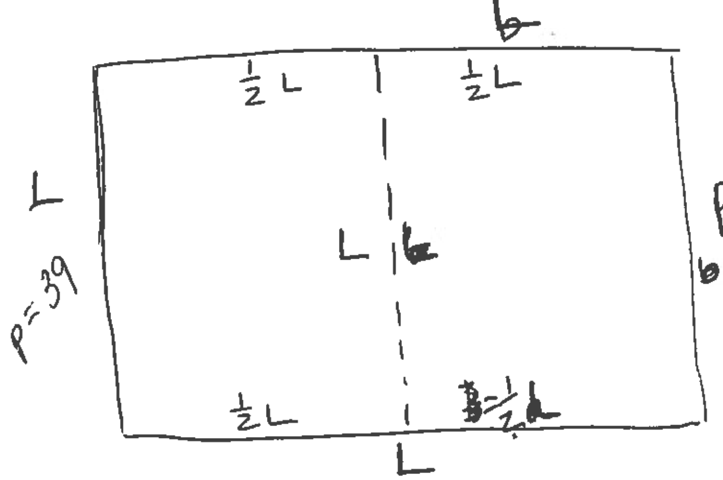
   e. Which hour did Johnny ride the fastest? Explain how you know.

      Johnny rode the fastest between 9-10am. His Km per hour was the greatest during that hour, ie 6 Km per hour.

Student__________ Team __________ Date __________ P1

**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?




each side length = L

$L + L + \frac{1}{2}L + \frac{1}{2}L = 39$

each side of the square is 13".

P = 39 in - square area = 13 in × 13 in = 169 in$^2$

The area of the rectangle is

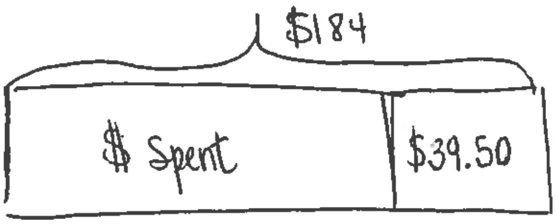
13 in × 6.5 in = (13 in × 6 in) + (13 in × $\frac{1}{2}$ in)

= 78 in$^2$ + 6.5 in$^2$ = 84.5 in$^2$

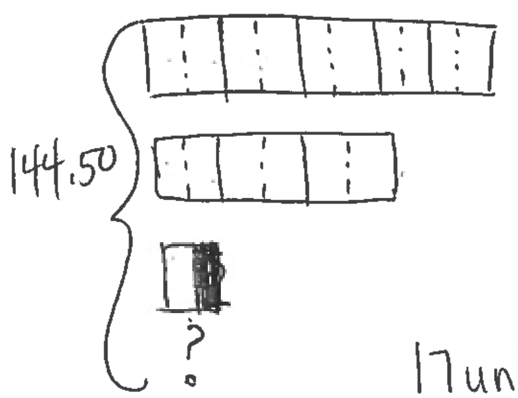
Student__________ Team __________ Date __________ P2

**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?




184.00
− 39.50
144.50




necklace

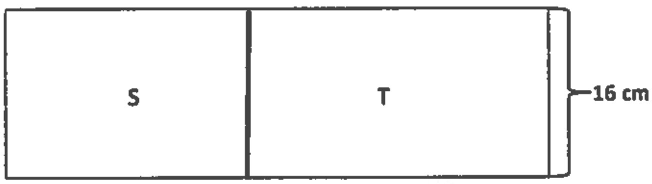
notebook

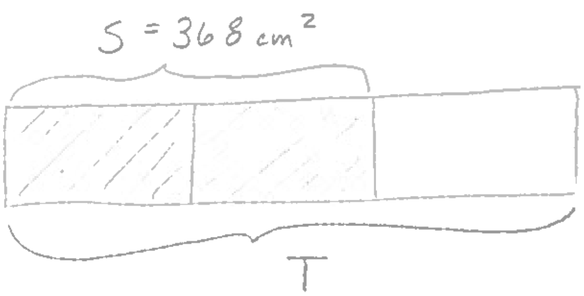
8.50 × 10 = \$85.00 necklace
8.50 × 6 = \$51.00 scarf
8.50 × 1 = \$8.50 notebook
8.50 × 9 = \$76.50
the necklace costs \$76.50 more than the notebook

17 units = 144.50
1 unit = 144.50 ÷ 17 = 8.50

Name ______________________________ Date ______________

In the diagram, the length of S is $\frac{2}{3}$ the length of T. If S has an area of 368 cm², find the perimeter of the figure.




$S = \frac{2}{3}$ of $T$ = 368 cm² = Area of S

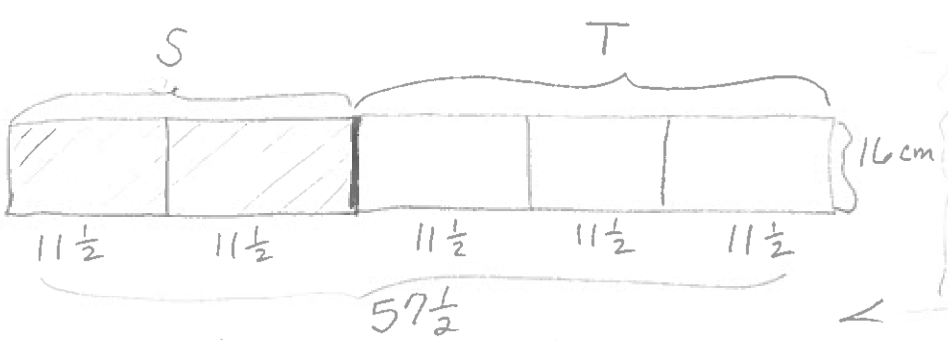
Therefore $\frac{1}{3}$ of $T$ =

$368\text{cm}^2 \div 2_{\text{cm}^2} = 184 \text{ cm}^2$

16 cm $\boxed{184\text{cm}^2} = \frac{1}{3}$ of T

To find the length of the missing side, divide 184 cm² by 16

$$\begin{array}{r} 11\tfrac{8}{16} \\ 16\,\overline{)\,184} \\ -16 \\ \hline 24 \\ -16 \\ \hline 8 \end{array} = \boxed{11\tfrac{1}{2}\text{ cm}}$$ is the length of the missing side




$11\frac{1}{2} \times 5 =$

$\frac{23}{2} \times \frac{5}{1} = \frac{115}{2}$

$= 57\frac{1}{2}$

P = Perimeter L = Length W = Width

P = 2L + 2W

$2(57\frac{1}{2}) + 2(16) = 115 + 32 = \boxed{147 \text{ cm}}$ ✱



B.

Name ______________________________ Date ________________

Fred and Ethyl had 132 flowers altogether at first. After Fred sold $\frac{1}{4}$ of his flowers and Ethyl sold 48 of her flowers, they had the same number of flowers left. How many flowers did each of them have at first?

Fred Ethyl

132


Ethyl - 36 flowers left over

Fred - 36 flowers left over

$$\begin{array}{r} 48 \\ +\ 84 \\ \hline 132 \end{array}$$



Ds

Name ______________________________ Date ____________________

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

a. Forty times the sum of forty-three and fifty-seven

Numerical expression:

$40 \times (43 + 57)$

Solution:

$40 \times (43 + 57)$

$40 \times 110$

$4{,}400$

b. Divide the difference between one thousand, three hundred, and nine hundred fifty by four

Numerical expression:

$(1{,}300 - 950) \div 4$ OK $\frac{(1{,}300 - 950)}{4}$

Solution:

$(1{,}300 - 950) \div 4$

$350 \div 4$

$87.5$

$\frac{350}{4}$

$87.5$

c. Seven times the quotient of five and seven

Numerical expression:

$7 \times \frac{5}{7}$

Solution:

$\frac{7}{1} \times \frac{5}{7} = \frac{35}{7}$

$5$

d. One-fourth the difference of four-sixths and three-twelfths

Numerical expression:

$\frac{1}{4} \times \left(\frac{4}{6} - \frac{3}{12}\right)$ or $\left(\frac{4}{6} - \frac{3}{12}\right) \div 4$

Solution:

$\frac{1}{4} \times \left(\frac{8}{12} - \frac{3}{12}\right)$

$\frac{1}{4} \times \frac{5}{12}$

$\frac{5}{48}$

$\frac{8}{12} - \frac{3}{12} \div 4$

$\frac{5}{12} \div 4$

$\frac{5}{12} \times \frac{1}{4}$

$\frac{5}{48}$



Maia Plehim