Lincoln Middle School

P.R.I.D.E.-Pride, Respect, Integrity, Dedication Excellence!
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Incoming Grade 6 Summer Math Packet 2019

Dear Students,

Please complete this Incoming Grade 6 math packet, over the summer to keep your math skills sharp. Spending 30-60 minutes each week reviewing Grade 5 math standards will help you to be more confident and well-prepared for your transition to the Middle School.

This is a requirement for Grade 6 and your Middle School team will collect the packet on the first day of school. This is a great opportunity for you to make a good first impression, with your new teachers.

If you are in need of help, do an online search for the standard, for example: *5.NBT.5 video,* seek out a family member, or talk it over with a friend. Be sure to **show all of your work and complete it neatly. Should you need another copy, they will be available on the Middle School website, elementary school website, or home school office.**

Have a great summer and good luck in the fall!

Sincerely,

Ann Whitelaw
Math Coach 3-5

COMMON CORE
MATH ASSESSMENTS
5TH GRADE

### OPERATIONS AND ALGEBRAIC THINKING
5.OA.3   Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pair on a coordinate grid.

1. Complete the table

$b = a - 5$

a	b
6	
7	2
8	
9	

2. Use the graph to complete the input-output table.

3. Create a line graph of the data table:

MEASUREMENT AND DATA
5.MD.2   Make a line plot to display a data set of measurements in fractions of a unit. Use operations on fractions for this grade to solve problems involving information presented in line plots.

1. Make a line plot of the following fractions:
1/8, 2/8, 2/8, 3/8, 4/8, 4/8, 6/8, 7/8, 7/8, 7/8, 7/8, 8/8, 8/8

2. Make a line plot of the following fractions:
½, ½, ¼, ½, ¼, ¼, ¼, ¼, ½, ¼, ½

MEASUREMENT AND DATA
5.MD.5   Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

1. What is the volume?

10 m   10 m

2. If the cube is 216 cubic cm, find the missing length.

the average length of the cket?

x

3. If the shape is 60 cubic missing length.

6 cm

GEOMETRY
5.G.1   Use a pair of perpendicular number lines to define a coordinate system, with the intersection of the lines arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers.

1. Connect these points in order on the grid below.
(2,2) (2,4) (2,6) (2,8) (4,5) (6,8) (6,6) (6,4) and (6,2)

2. Plot these points on the coordinate grid.
A(2,6) B(4,6) C(6,3) D(2,3)

3. Draw a line segment from (1,3) to (4,5).

4. Draw a line segment from (2,5) to (5,5). Then draw another line parallel to it.

OPERATIONS AND ALGEBRAIC THINKING

5.0A.1   Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

1. Solve the equation below:

$$(4 + 3) \times 6 = \rule{2cm}{0.4pt}$$

2. Solve the equation below:

$$(9 - 6) \times 8 = \rule{2cm}{0.4pt}$$

3. Solve the equation below:

$$3 + (4 \times 5) = \rule{2cm}{0.4pt}$$

4. Solve the equation below:

$$(40 / 5) + (3 \times 9) = \rule{2cm}{0.4pt}$$

OPERATIONS AND ALGEBRAIC THINKING

5.0A.2 Write simple expressions that record calculations with numbers, and interpret numerical expression without evaluating them..

1. Kailey bought a bag of jelly beans. She ate 27 of them and had 54 left. Write and solve an equation that tells how many jelly beans were in the bag.	2. Mya bought a pack of gum. She gave 42 pieces of gum to her friend Seth and had 18 pieces left. Write and solve an equation that tells how many pieces of gum were in the pack.
3. David bought 5 packages of light bulbs. He bought 60 light bulbs in all. Write and solve an equation that tells how many light bulbs were in each package.	4. On the first day of school, all the fifth graders were divided into 3 classes. There were 21 students in each class. Write and solve an equation that tells the total number of students.

OPERATIONS AND ALGEBRAIC THINKING

5.OA.3   Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pair on a coordinate grid.

1. Complete the table

$$b = a - 5$$

a	b
6	
7	2
8	
9	

2. Use the graph to complete the input-output table
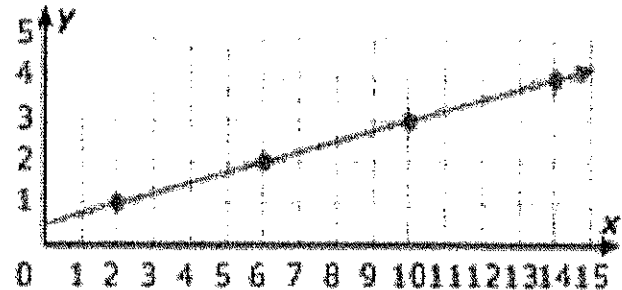
In	out
2	1
6	2
10	3
	4

3. Create a line graph of the data table:

X	Y
0	6
1	7
2	8
3	9
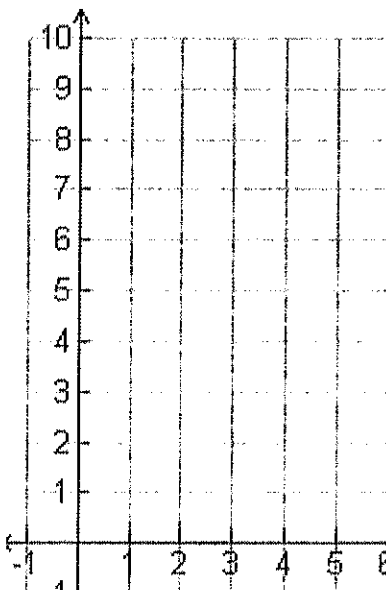
4. Create a line graph of the data table:

X	Y
2	3
3	4
4	5
5	6
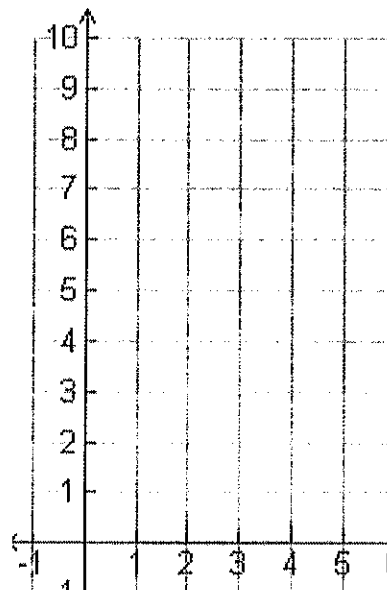
NUMBERS AND OPERATIONS BASE TEN

5.NBT.1   Recognize that a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right at 1/10 of what it represents in the place to its left.

1. Write a number that is 10 times as much as 784:

2. Solve:

7 thousands = _____ ones

3. In the number 923.5648, which digit is in the thousandths place?

4. Solve

3 tenths = _____ thousandths

NUMBERS AND OPERATIONS BASE TEN

5.NBT.2   Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. Use whole-number exponents to denote powers of 10.

1. How do you write 5×10^2 in standard form?	2. Complete the pattern: $3 \times 5 +$ _____ $30 \times 5 =$ _____ $300 \times 5 =$ _____ $3,000 \times 5 =$ _____ $30,000 \times 5 =$ _____ $300,000 \times 5 =$ _____
3. Solve: 10^4	4. Solve: 3×10^6

NUMBERS AND OPERATIONS BASE TEN

5.NBT.3   Read, write, and compare decimals to thousandths using base-ten numerals, number names, and expanded form.

1. Write 347.392 in expanded form:	**2. Solve using >, <, or =** 2.52 _____2.24
3. Write the number: three thousand four hundred eighty-two and sixty four thousandths.	**4. Solve using >, <, or =** 4.036 _____4.603

NUMBERS AND OPERATIONS BASE TEN

5.NBT.4   Use place value understanding to round decimals to any place.

1. Round the number 3.64 to the nearest whole number.	2. Round the number 25.32 to the nearest tenth.
3. Round the number 364.358 to the nearest hundredth.	4. Round the number 38.482 to the nearest thousandth.

NUMBERS AND OPERATIONS BASE TEN

5.NBT.5   Fluently multiply multi-digit whole numbers using the standard algorithm.

1. Solve:

$$\begin{array}{r} 63 \\ \times\ 4 \\ \hline \end{array}$$

2. Solve:

$$\begin{array}{r} 108 \\ \times\ \ \ 9 \\ \hline \end{array}$$

3. Solve:

$$\begin{array}{r} 27 \\ \times\ 18 \\ \hline \end{array}$$

4. Solve:

$$\begin{array}{r} 35 \\ \times\ 26 \\ \hline \end{array}$$

NUMBERS AND OPERATIONS BASE TEN

5.NBT.6   Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

1. Solve: 23 ⟌ 8475	2. Solve: 12 ⟌ 144
3. A chef needs 28 onions. There are 14 onions in each bag. How many bags should the chef buy?	4. A restaurant needs 72 carrots. There are 6 carrots in each bunch. How many bunches of carrots should the restaurant buy?

NUMBERS AND OPERATIONS BASE TEN

5.NBT.7   Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

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1. Solve:

$$149.32$$
$$+ \ 23.54$$

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2. Solve:

$$149.32$$
$$- \ 23.54$$

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3. Solve:

$$149.32$$
$$\times \quad .40$$

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4. Solve:

$$.3 \ \overline{) \ 149.34}$$

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.1   Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

1. Solve:

$$\frac{2}{3} + \frac{5}{4} =$$

2. Solve:

$$\frac{1}{2} + \frac{5}{12} =$$

3. Solve:

$$\frac{4}{9} + \frac{1}{3} =$$

4. Solve:

$$\frac{1}{3} + \frac{3}{6} =$$

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.2   Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.

1. White making desserts for a bake sale, Nancy used 4/5 of a scoop of brown sugar as well as 3/5 of a scoop of white sugar. How much more brown sugar did Nancy use?	2. A car traveled 1/2 of a mile and stopped for gas. Then it traveled another 2/3 of a mile. How far the the car travel in all?
3. Alyssa made a fruit salad with ¼ of a pound of melon and ¼ of a pound of berries. How many pounds of fruit did Kristen use in all?	4. A man caught a bug that was ¾ of a foot long. He caught another bug that was 3/8 of a foot long. How long were the bugs altogether?

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.3   Interpret a fraction as division of the numerator by the denominator. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

1. Tom, Jack, Lisa, and Jane combine their money to buy three large pizzas. If they share the pizzas equally, what fraction of a whole pizza does each friend get?

2. Jessica and her 7 friends share 3 liters of apple juice equally. How much juice does each friend get?

3. Jack bakes 10 trays of cookies using 8 cups of milk. How many cups of milk does he use for each try of cookies?

4. A group of 8 office workers order 12 packs of sushi for lunch. If the packs of sushi are shared equally, what fraction of each pack will each office worker get for lunch?

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.4   Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

1. Multiply:

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

2. Multiply:

$$\frac{2}{9} \times 9 =$$

3. Multiply:

$$\frac{1}{5} \times \frac{4}{6} =$$

4. Multiply:

$$\frac{2}{8} \times \frac{6}{7} =$$

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.5   Interpret multiplication as scaling (resizing).

1. A can of tomatoes will make sauce for 6 campers. How many cans should be purchased to make spaghetti for 240 campers?	2. If pizzas are shared evenly, will a child get more pizza sharing 4 pizzas with 10 children or 3 pizzas with 8 children?
3. Compare using <, >, or = $\dfrac{3}{7}$ _____ $\dfrac{1}{12}$	4. Compare using <, >, or = $\dfrac{13}{20}$ _____ $\dfrac{3}{5}$

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.6   Solve real world problems involving multiplication of fractions and mixed numbers.

1. A bow factory put 4 bows in each box. It takes 4¾ inches of ribbon to make each bow. How many inches of ribbon does it take to make enough bows to fill a box?	2. The elephants at the zoo are fed 4½ barrels of food each day. The buffalo are fed 3 times as much as the elephants. How many barrels of food are the buffalo fed each day?
3. On Friday, Sam ate a pizza for dinner and had 1/3 of the pizza left over. On Saturday, he ate ½ of what was left. How much of the pizza did she eat on Saturday?	4. James owns a hot dog stand. On Monday he uses 3/5 of a bag of hot dog buns. On Tuesday, he used 3 times as many buns as on Monday. How many bags of hot dog buns did James use on Tuesday?

NUMBERS AND OPERATIONS - FRACTIONS

5.NF.7   Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

1. Divide:

$$6 \div \frac{1}{2} =$$

2. Divide:

$$4 \div \frac{1}{5} =$$

3. Divide:

$$3 \div \frac{1}{10} =$$

4. Divide:

$$2 \div \frac{1}{4} =$$

MEASUREMENT AND DATA

5.MD.1　　　Convert among different-sized standard measurement units with a given measurement system, and use them in solving multi-step real world problems.

1.　It is 12 kilometers from Jason's house to the swimming pool. How many meters is it?	2.　A football field with end zones is 120 yards long. How many feet long is the football field?
3.　Mrs. Mack went to a hardware store to buy 8 yards of fencing. The fencing was measured in feet so she purchased 46 feet. What is wrong with the purchase Mrs. Mack made?	4.　Solve: _____ quarts = 16 pints

MEASUREMENT AND DATA

5.MD.2   Make a line plot to display a data set of measurements in fractions of a unit. Use operations on fractions for this grade to solve problems involving information presented in line plots.

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1. Make a line plot of the following fractions:

1/8, 2/8, 2/8, 3/8, 4/8, 4/8, 4/8, 6/8, 7/8, 7/8, 7/8, 7/8, 8/8. 8/8

_____

2. Make a line plot of the following fractions:

¼, ½, ¾, ½, ½, ¾, ½, ¼, ¼, ½

_____

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3. David graphed the length of coins in his pocket to the nearest ¼ inch. How many coins were over ¼ inch long?

```
                        X
                        X
        X       X       X       X
        X       X       X       X
  ←--+---+-------+-------+-------+--→
     0   1       2       3       4
         ─       ─       ─       ─
         4       4       4       4
```
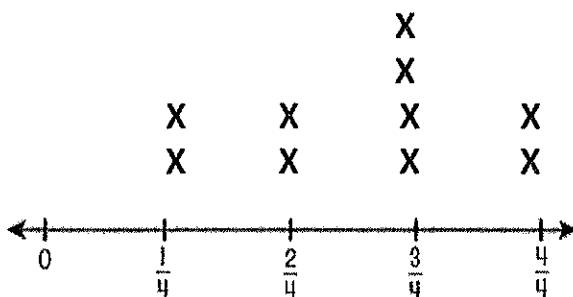
4. What was the average length of the coins in his pocket?

```
                                X
                                X
                X       X       X       X
                X       X       X       X
    ←--+-------+-------+-------+-------+--→
       0       1       2       3       4
               ─       ─       ─       ─
               4       4       4       4
```
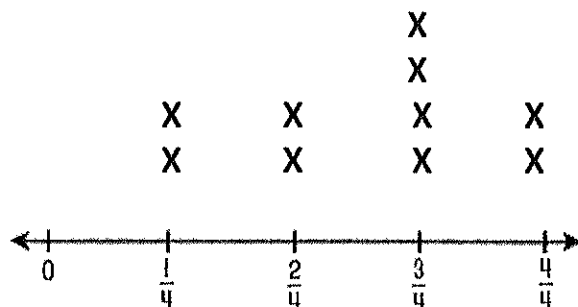
MEASUREMENT AND DATA

5.MD.3   Recognize volume as an attribute of solid figures and understand concepts of volume measurement. A cube with side lengths of 1 unit can be used to measure volume, A solid figure which can be packed without gaps or overlaps using cubs is said to have volume of n cubic units.

1.   **What is the volume of this object?**
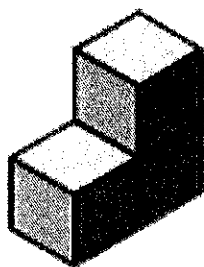
2.   **What is the volume of this object?**
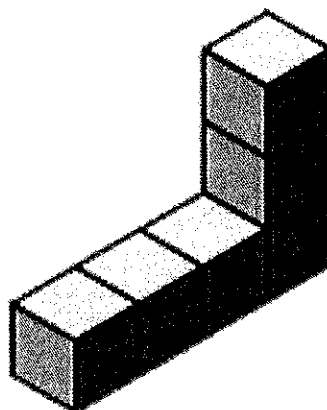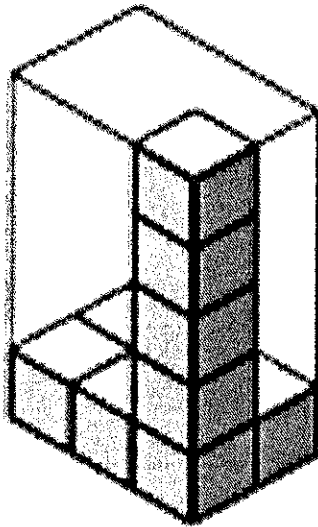
3.   **What is the volume of this object?**
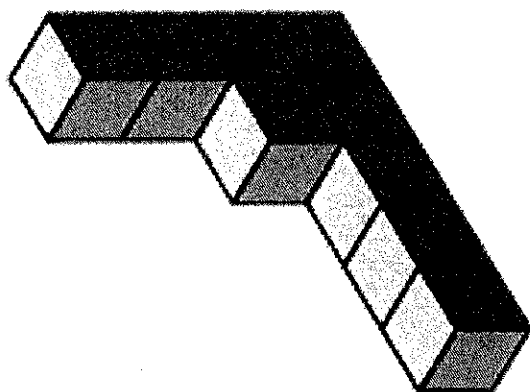
4.   **What is the volume of this object?**
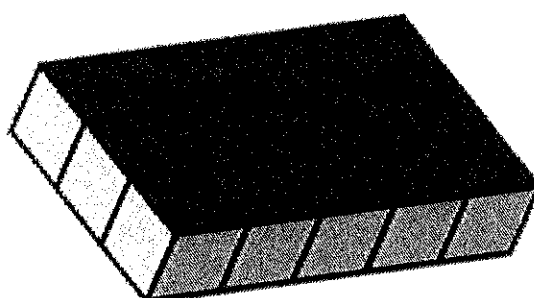
MEASUREMENT AND DATA

5.MD.4   Measure volumes of counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

1. How many cubic inches will fill the box?	2. How many cubic ft will fill a room that is 5 feet wide, 6 feet long, and 7 feet tall?
3. How many cubic centimeters will fill a box that is 10 centimeters long, 5 centimeters wide, and 3 centimeters tall?	4. A box has a volume of 30 cubic inches. The length is 3 inches and the width is 5 inches. How tall is the box?

MEASUREMENT AND DATA

5.MD.5   Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

1. **What is the volume?**

10 m
10 m
10 m

2. **If the cube is 216 cubic cm, find the missing length.**

6 cm
6 cm
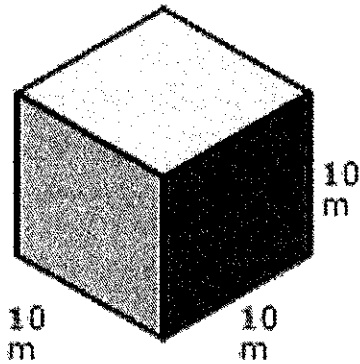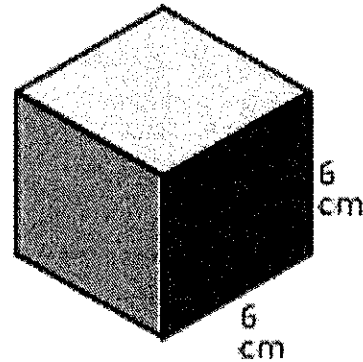
3. **If the shape is 60 cubic cm, find the missing length.**
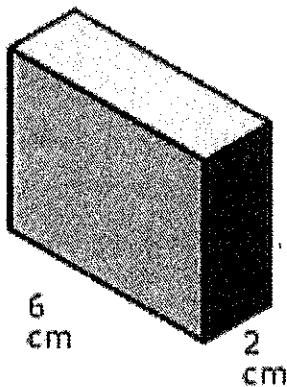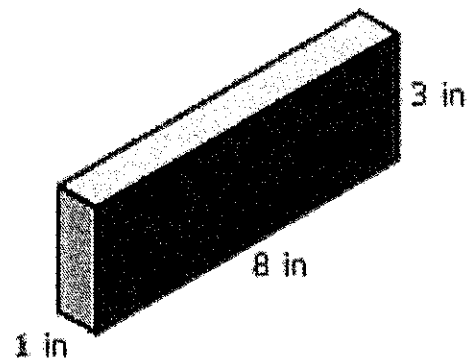
6 cm
2 cm

4. **What is the volume?**

3 in
8 in
1 in

GEOMETRY

5.G.1   Use a pair of perpendicular number lines to define a coordinate system, with the intersection of the lines arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers.

1.   Connect these points in order on the grid below.

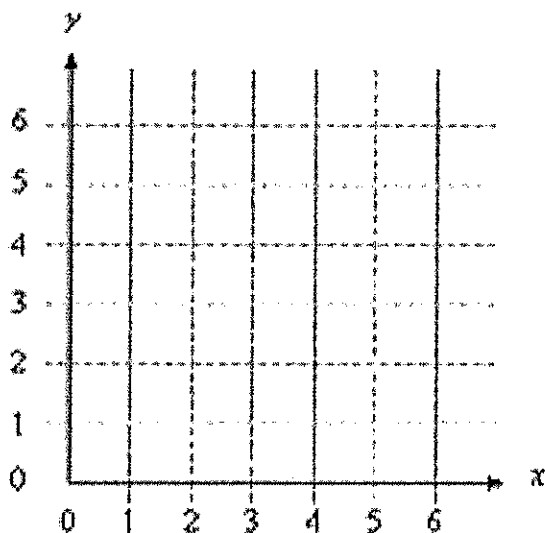(2,2) (2,4) (2,6) (2,8) (4,5) (6,8) (6,6) (6.4) and (6.2)
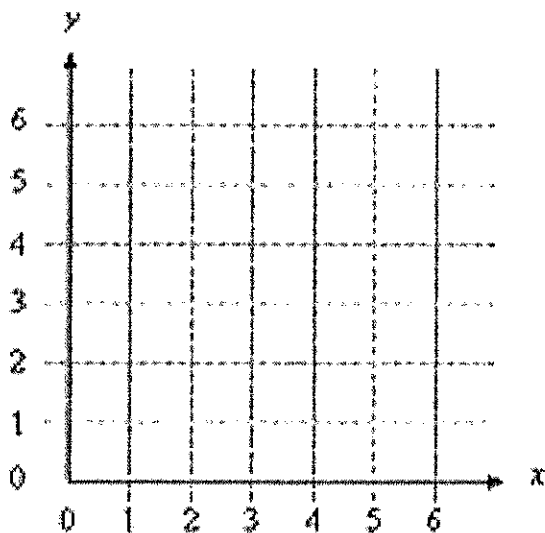
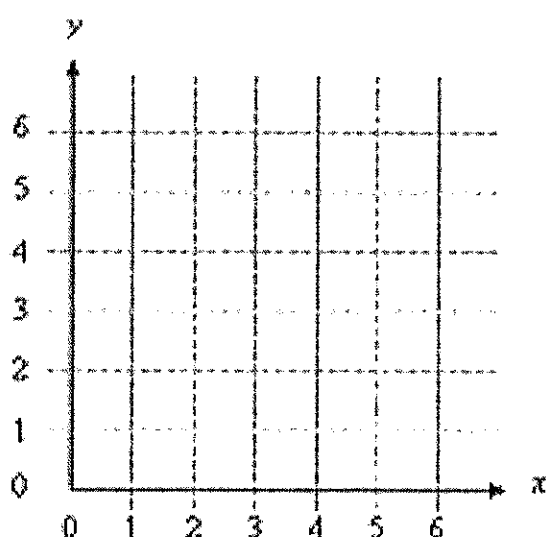2.   Plot these points on the coordinate grid.

A(2,6) B(4.6) C(6.3) D(2,3)

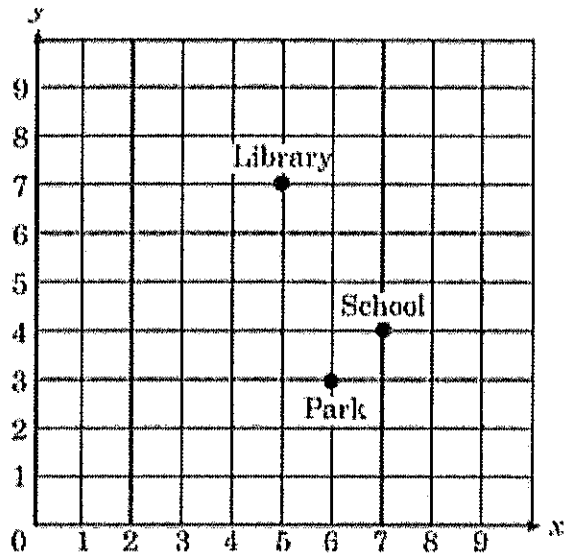3.   Draw a line segment from (1,3) to (4,5).

4.   Draw a line segment from (2,5) to (5,5). Then draw another line parallel to it.
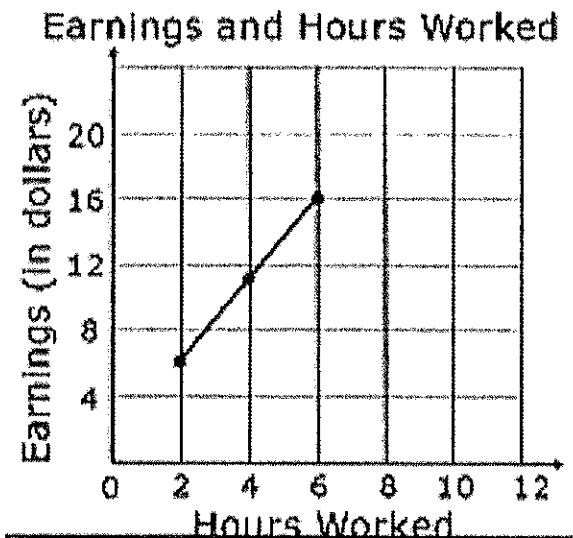
GEOMETRY

5.G.2   Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
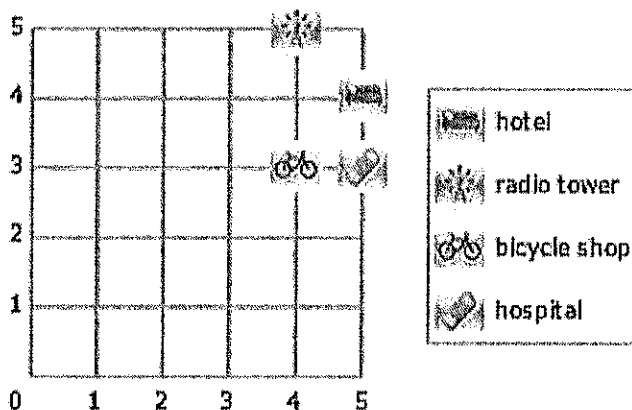
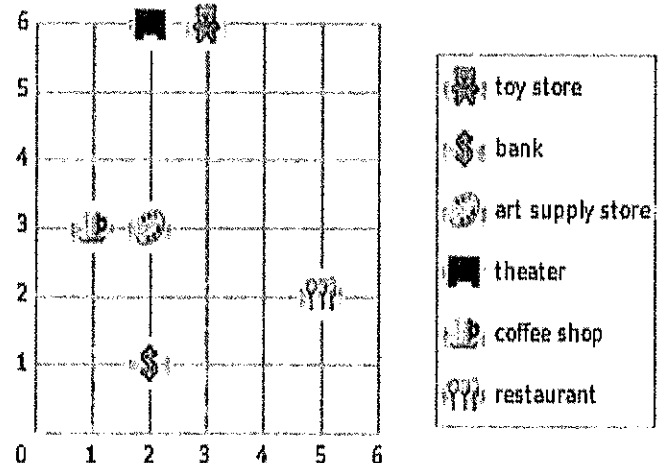**1. Which ordered pair shows the location of the School?**

2. How much money will be made after 8 hours worked?

Earnings and Hours Worked

3. Where is the hotel?

hotel
radio tower
bicycle shop
hospital

4. Where is the theater?

toy store
bank
art supply store
theater
coffee shop
restaurant

GEOMETRY

Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

1. A parallelogram has 4 sides with both sets of opposite sides parallel. Name 2 types of quadrilaterals that are parallelograms.	2. Regular polygons have all of their sides and angles congruent. Draw two regular polygons.
3. All rectangles have 4 right angles. Squares have 4 right angles so they are also rectangles. Is this true or false?	4. A trapezoid has 2 sides parallel so it must be a parallelogram. True or false?

GEOMETRY

5.G.4   Classify two-dimensional figures in a hierarchy based on properties.

1. Name three quadrilaterals.	2. Draw three polygons that are not quadrilaterals.
3. Draw three parallelograms.	4. Complete the chart with the words below: Polygons, rhombus, quadrilaterals, rectangles, square.