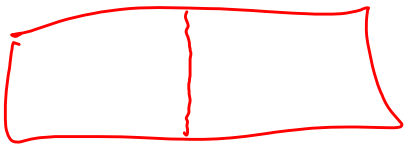
Week 1

State Standards – 6.7.03, 6.7.05, 6.7.06, 6.7.08

1. In these problems, decimals have been left out of some of the answers. Where should the decimal points go?

   A. $54.25 \bullet 4.8 = 260544$
   B. $113.24 \div 1.52 = 745$
   C. $738.4 \bullet 0.02 = 14768$
   D. $461.6 \div 0.4 = 1154$



2. Write in standard form.

   A. One hundred seven thousandths
   B. One hundred and seven thousandths

3. Draw a picture of $\frac{5}{3}$.

4. Find a fraction equivalent to $\frac{9}{15}$ whose numerator and denominator add up to 64.

5. Add or subtract. Make sure your answer is in lowest terms.

   A.) $8\frac{1}{2} + \frac{3}{8} =$

   B.) $7 - 5\frac{1}{2} =$

   C.) $2\frac{3}{12} + 5\frac{3}{12} =$

Week 2

State Standards – 6.7.03, 6.7.16, 6.7.17

1. What is 75 % of 200?

2. Cara and Evelyn want to leave a 15% tip for a dinner tab of $27.55. About how much should they leave for the waiter?

3. A sign in a sporting goods store reads as follows:

   CLEARANCE SALE $\frac{1}{2}$ % OFF!

   Is this a good sale? If the sign is accurate, what would the sale price of a $100 coat be?

   Did the person who made the sign make a mistake? If so, what do you think was intended?

4. The value of Shazam Company stock has only increased 0.75% this year. If the value of the stock was $200 at the beginning of the year, how much has it increased in value?

5. Joe has six pets. Two are frogs, three are turtles, and one is a snake.
   - What percent of the pets are frogs?
   - What percent of the pets are turtles?
   - What percent of the pets are turtles or snakes?
   - What percent of the pets are not snakes?
   - What percent of the pets are not turtles?

Week 3

State Standards – Problem Solving Goal

1. A parking garage charges $1.50 for the first hour and $0.75 for each additional hour or part of an hour. How much will it cost to park in the garage for 6 $\frac{1}{2}$ hours?

   y = 0.75(x - 1) + 1.50 Write an equation.
   y = 0.75(7 - 1) + 1.50 Substitute 7 for x.
   y = 0.75(6) + 1.50 Parentheses.
   y = $6.00

2. Sandy ate [redacted] How many pumpkin seeds did Sandy eat on the first day?

   x is the number of seeds Sandy ate on the first day.
   x + 6 on the 2nd day
   x + 12, then x + 18, then x + 24 She ate 8 seeds on day one.

3. Each day a frog eats [redacted] of bugs it ate on the day before. If it ate 10 bugs today, how many bugs will it eat 5 days from now?

   1 + 2x

4. A phone company charges [redacted] and 3 cents [redacted] each additional minute. How much would a 15 minute call cost?

   y = 13 + 3(x - 1)
   y = 13 + 3(15 - 1) Substitute 15 for x
   y = 13 +3(14) Now calculate. 13 + 42 = 55 cents

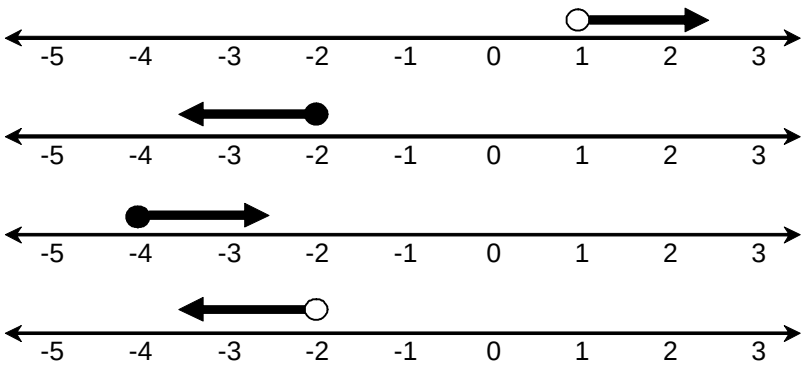
5. An ant crawls up a wall [redacted] twice [redacted] it crawled the day before. If it crawled 5 inches today, how many inches will it crawl seven days from now?

   2 + 2x
   5 today
   12 tomorrow
   26, 54, 110, 222, 446 inches

Week 4

State Standards – 8.7.09

1. Write an inequality for each of the following graphs:



2. Make a number line to represent the following inequalities:

$x > -2$

$-2 \leq x$

$n \geq 1$

$0 < m$

3. Make a number line to represent the following inequalities:

$x < 0$

$x \geq -3$

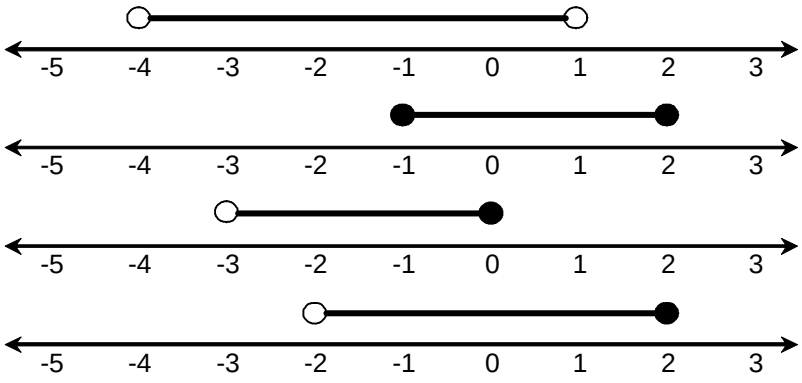
$-1.5 < x$

$2 \geq x$

4. Make a number line to represent the following inequalities:

$$-3 < x < 2$$
$$-2 \geq x \text{ OR } x \geq 1$$
$$-1.5 < x < 2$$
$$0 \geq x \text{ OR } x \geq 2$$

5. Write an inequality for each of the following graphs:



Knowledge for College
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Week 5

State Standards – 6.7.04, 6.7.07

1. Find all of the factor pairs for 36.

1, 2, 3, 4, 6, 9, 12, 18, 36

$8 \div 0$ = Domain error

2. Find the largest possible six digit even number that meets the following conditions:
   - The ten-thousands digit is twice the tens digit.
   - The hundred-thousands digit is a prime number.
   - The thousands digit is divisible by the ones digit.
   - No digit is used more than once.

7 8 6 , 9 4 2 — 2 6 8 , Ø 3 4

3. What is the prime factorization of 490?

128

490 = 49 · 10 = $2 \cdot 5 \cdot 7^2$

4. A fly circles a room once every 18 seconds. Another fly circles the same room in 24 seconds. If they started together, how many seconds will it be before they could start together again?

5. Two wooden boards measuring 63 inches and 84 inches are to be cut into the longest possible shelves of equal length using all of the wood. How long will the shelves be?

Week 6

State Standards – Problem Solving Goal

1. A magazine page is $10\frac{1}{4}$ in tall. The printed area is $8\frac{3}{4}$ in tall. The bottom margin is $\frac{9}{16}$ in tall.

   How high is the top margin?

2. Mary made a display of CD's. There are three games in the top row. There are three more CD's in each row than the row above it. If the display has eight rows, how many CD's did Mary use?

3. A cable 84 meters long is cut into two pieces so that one piece is 18 meters longer than the other. Find the length of each piece.

4. You are in a hotel. You get on the elevator. You go up four floors, down seven floors, and up nine floors. You were then on the top floor. Then you went down six floors, up two floors, and down eight floors. You were then on the first floor. Where did you get on?

5. Gina and Mark had found all the things on the list for the treasure hunt. But, they were lost and had to get back to the starting point. Gina said, “When we were at the bridge, we were 2 blocks west of the starting point. Can you remember where we went after that?” Mark said, “We went south 3 blocks, then we turned left and went 5 blocks, left again for 2 blocks, and north one more block. What direction and how many blocks do they need to go to get to the starting point?

Week 7

State Standards – 6.7.10, 9.7.07

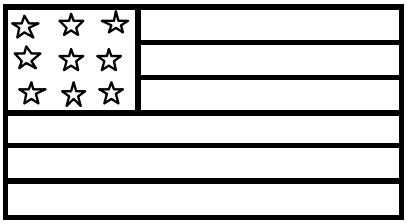
1. True or False?
   A. 3 + Zip = Zip + 3
   B. Zap + 0 = Zap
   C. Zoot + (Zee + Zim) = (Zoot + Zee) + Zim
   D. Zute – Zute = 0

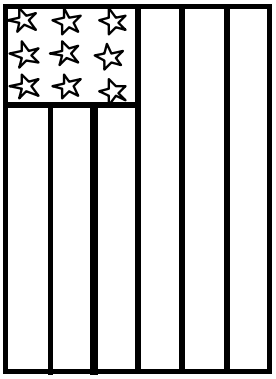
2. Name the property.
   A. ab = ba
   B. 5(x + 4y) = 5x + 20y
   C. 1m = m
   D. 7n + 7x = 7(n + x)
   E. (3 • 4)5 = 3(4 • 5)

3. Which of these is an example of the associative property?

   A. (5 + 2) + 4 = 5 + (2 + 4)
   B. 7x(4y) = 4y(7x)
   C. 24x = 10x + 14x
   D. 7x + 7y = 7(x + y)

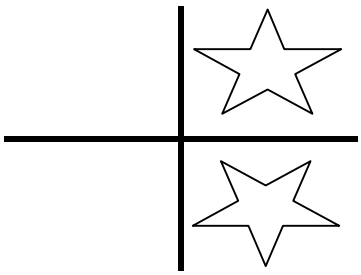
4. Sam has a U.S. flag that he displays as shown below. The area with the stars is called the union. He wants to hang the flag vertically so that the union is still in the upper-left corner. Which two transformations could he use (rotations, translations, reflections)?



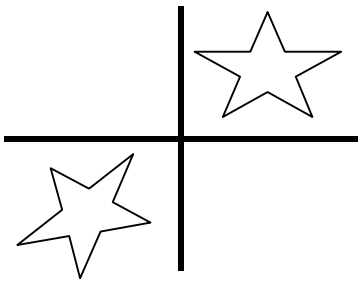


5. Which of the following is an example of a translation?

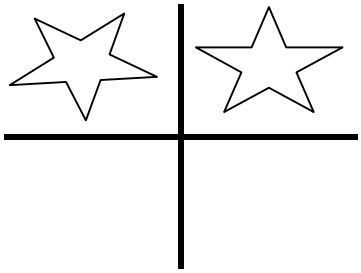
A



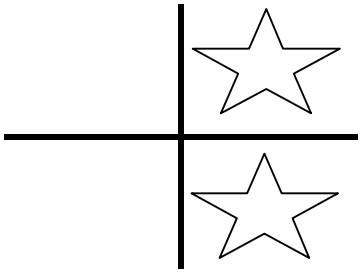
B



C



D



Week 8

State Standards – Problem Solving Goal

1. Karen had [redacted], [redacted] and [redacted]. After she lost one coin, she had 7 times as much money as her brother. Which coin did she lose?

___ + ___ + ___ + ___ = ___

She lost her half dollar.

2. Use this guess and check table to find two [redacted] numbers whose [redacted] is 376.

First odd number	Second odd number	Sum	Check
99	101	200	☹
299	301	600	☹
187	189	376	😛

21 ÷ 3 = 7

579

376 ÷ 2

187 189

3. [redacted] coins equal $1.00. There are [redacted] of dimes as there are nickels. There are other coins besides dimes and nickels. What are the coins?

hyphen

Thirty-five coins equal $1.00. There are the same number of dimes as there are nickels. There are other coins beside dimes and nickels. What are the coins?

dime	nickel	total
1	1	15
2	2	30
3	3	45
4	4	60
5	5	75
6	6	90
7	7	105

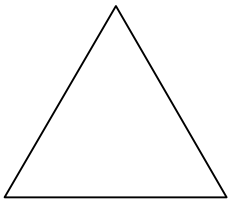
25

10

4. Jamal is thinking of three numbers. The greatest is twice the least. The middle is three more than the least. The numbers total 75. Find the numbers.

Least				Check

5. Copy the triangle and place the digits from 1 through 9 with one at each vertex and two along each side so the sum along each side is 17.



Week 9

State Standards – 8.7.02, 8.7.03, 8.7.04, 8.7.05

1. Write an expression to represent the number of points scored by Kaitlin in a basketball game if she made x number of 3 point shots, y number of 2 point shots, z number of 1point free throws.

2. Evaluate.
    1. 2(25 + w) when w = 7
    2. 2(3r) when r = 3
    3. 150 – 150d when d = 2

3. Which expression means 7 more than the product of 10 and a number x, times 4?
    A. 4(7x + 10)
    B. 4(10x + 7x)
    C. 4 + (10x + 7)
    D. 4(10x + 7)

4. Which algebraic expression would you use to find the number of cents in q quarters?
    A. 25 – q
    B. q + 25
    C. 25/q
    D. 25q

5. If x is an integer, write and simplify an expression for the sum of x and the next five consecutive integers.

Week 10

State Standards – 8.7.10, 8.7.11, 8.7.12

Note: Do not try to teach a balance method for equations. Teach solving equations using guess and check at this point in the curriculum.

1. If $2x = 8$, what is the value of the expression $2x + 5$?

2. Solve the following equations:

$$4x - 8 = 20$$
$$18 = 3y + 6$$

3. A quarter and a dime weigh the same as three dimes. How many dimes would it take to weigh the same as four quarters?

4. Find all of the numbers that satisfy the following inequality:

$$n + 2 < -5$$

5. Find all of the numbers that satisfy the following inequality:

$$15 \leq 4x - 1$$

Week 11

State Standards – 8.7.10, 8.7.11, 8.7.12

1. Write and solve an equation for the following:
   The sum of four and some number is equal to 22.

2. Write and solve an equation for the following:
   Forty two equals twelve less than half a number.

3. Write and solve an equation for the following:
   What three consecutive even numbers have a sum of 738?

4. Write and solve an inequality for the following:
   Five more than twice a number is less than eleven.

5. Write and solve an inequality for the following:
   A number minus three is greater than or equal to -3.

Week 12

State Standards – 8.7.01

1. What are the next two products?

   $1 \bullet 1 = 1$
   $11 \bullet 11 = 121$
   $111 \bullet 111 = 12321$

2. Fill in the missing numbers in these pattern problems.

   1.25, 2, _____, 3.50, _____, _____
   $\frac{1}{2}$, $1\frac{1}{4}$, _____, $2\frac{3}{4}$, _____, _____
   3.5, 3.75, _____, 4.25, _____, _____

3. To extend a numerical pattern, you multiply by three. If the fourth number in the pattern is 54, what are the first three numbers?

4. Find as many ways as you can to supply the missing terms of this sequence.

   1, ___, ___, 64 …

5. Mele is making a tree for her holiday play. The first branch will have one star. The second branch will have two stars. The third branch will have three stars and so on. If her tree has 15 branches, how many stars will she need to make?

Week 13

State Standards – 6.7.15

1. A ratio is equivalent to 3:8. When the ratio is written as a fraction, the sum of the numerator and denominator is 121. What is the ratio?

2. If the Mara family drives to Philadelphia at the speed of 57 mph, how many miles would they drive in 90 minutes?

3. The head of George Washington carved on Mount Rushmore is about 60 feet high. Suppose the whole body were carved. About how tall would it be?

4. Two migrating gray whales were traveling at the same speed but started at different times. When the first whale traveled 7 miles, the second whale had traveled 2 miles. When the first whale had traveled 15 miles, the second whale had traveled 10 miles. Is this a proportional relationship?

5. Size D batteries cost $2.19 for 3 batteries. At this rate, how much will 5 batteries cost?

Week 14

State Standards – Problem Solving Goal

1. Jennifer received her father's entire set of baseball cards for her birthday. One-third of the cards are Yankee's. One-third of the cards are Giants. One-sixth are Phillies. One-twelfth are Tigers and 30 are Padres. How many cards was she given?

2. Sara's softball team can be divided into four groups. Half of the players are strong hitters. One-fourth are good pitchers. One-eighth are good at the outfield and 2 are catchers. If each player is in only one group, how many players are on the team and how many players are in each group?

3. Half of the people in a ballroom left. One third of the remaining people danced the bunny hop. There were 18 people not dancing. How many people were originally in the room?

4. Ken spends half his money on lunch and then spends $1.50 for a magazine. He uses one third of what he has left to pay for the bus ride home, then gives his little brother a quarter. If Ken has three nickels and two quarters left, how much money did he have before lunch?

5. Work backwards to find the latest time you should start your homework if your bedtime is 9:30, your bedtime routine takes 15 minutes, and you have the following homework: 20 minutes of English, 30 minutes of Math, and 15 minutes of Science.

Week 15

State Standards – Problem Solving Goal

1. Amir, Lisa, Joel, and Mary are each active in a different sport. Their sports are golf, tennis, bowling, and running. Lisa is the sister of the tennis player. Mary's sport does not use a ball. Joel once made a hole in one in his sport. Which sport does each person play?

	Amir	Lisa	Joel	Mary
Golf				
Tennis				
Bowling				
Running				

2. Mary, Beth, and Jane are on the basketball team. The center, who never scores any points, is an only child. Mary, who dates Jane's brother, scores more points than the guard. Their positions are guard, center, and forward. Which position does each person play?

Mary			
Beth			
Jane			

3. Sal goes to a small private school in Illinois. There are only three teachers. Using these clues, who teaches what subjects?

- Each teacher is an expert in the subjects he/she teaches.
- Five subjects are taught: Math, English, History, Geography, and French.
- Each teacher teaches three subjects.
- No subject is taught by all three teachers.
- Mrs. Stone doesn't know what an obtuse angle is.
- Mrs. Dow knows where the Gobi Desert is. She's the only one who knows this.
- Mr. George doesn't speak any foreign languages.

	Math	English	History	Geography	French
Stone					
Dow					
George					

4. Find how many people live in the village by using the following clues:

   - 15 cats live in the village.
   - For every 2 people in the village, there are 3 dogs.
   - There is a total of 75 living animals in the village. Living animals include dogs, horses, cats, and people.
   - 10 more horses than cats live in the village.

5. A pencil and an eraser together cost 40 cents. If the pencil costs 30 cents more than the eraser, what is the cost of the eraser?

Week 16

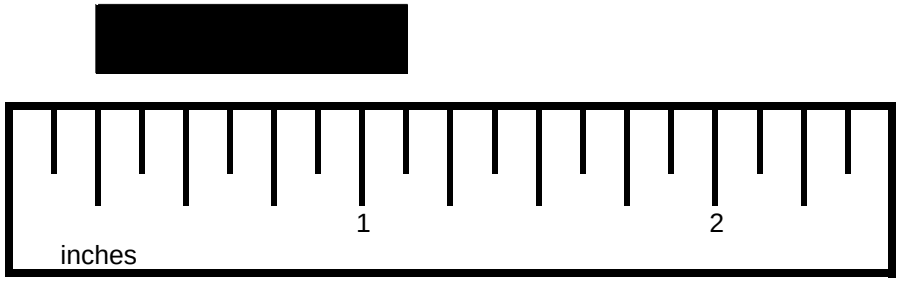
State Standards – 7.7.01, 7.7.03, 7.7.05

1. Convert 5,216 ounces to pounds.

2. Would you use inches, feet, yards, or miles to estimate each length?
   - Distance around your wrist
   - A football field
   - Your height
   - Cloth or material
   - The length of a sheet of paper
   - Distance from home to school

3. John likes to give answers in large numbers. When he was asked how old he was, he answered 6,307,200 minutes. How many years old was John?

4. Look at the rectangle being measured below. What is the length of the rectangle?



5. Sam bought $5\frac{3}{4}$ pounds of potatoes, $3\frac{1}{2}$ pounds of sugar, and 8 ounces of garlic. How many pounds of groceries does Sam need to carry?

Week 17

State Standards – Technology

1. During the bell ringer time, teach how to do measurement conversions on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

2. During the bell ringer time, teach how to do squares and square roots on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

3. During the bell ringer time, teach how to do GCF and LCM on the graphing calculator. (Use the Math key, then go to Number.) If you aren't sure how to do this, see your MIS for help.

4. During the bell ringer time, teach how to use the area formulas under the programming key on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

5. During the bell ringer time, teach how to use the area formulas under the programming key on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

Week 18

State Standards – 6.7.04, 6.7.06, 6.7.13

1. I'm thinking of a number. It is greater than 5^2. It is less than 15^2. It is a multiple of 2 and 5. It is a perfect square. What is the number?

2. Square the difference of 3 and 7.

3. The square root of 35 will fall between which two whole numbers?

4. The square root of 3 is between 1 and 2, because 3 is between 1^2 and 2^2. Between which two whole numbers is the square root of 17?

5. A square television screen covers an area of about 41 square inches. Estimate the length of the screen.

Week 19

State Standards – 8.7.08, 8.7.10, 8.7.11, 8.7.12

1. Dylan withdrew $45 from his savings account at the bank. His new balance is $243.25. What was his previous balance? Write an equation for this problem and solve.

2. Brad bought four decals. Each decal cost the same amount. He also bought a poster for $6. Altogether, he spent $7.40. How much did one decal cost? Write an equation and solve.

3. Suppose you have $65 saved and you plan to add $4 each week to your savings. Write an equation that you could use to find the amount y that you have saved after x weeks.

4. A triangular garden is a different length on each side. Side two is 5 meters longer than side one. Side three is 6 meters shorter than side one. If the perimeter of the garden is 89 meters, what is the length of each side?

5. The length of a rectangle is 3 cm more than twice its width. The perimeter is 60 cm. What is the length and width?

Week 20

State Standards – Technology

1. During the bell ringer time, teach how to find circumference using the programming key on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

2. During the bell ringer time, teach how to find volume using the programming key on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

3. During the bell ringer time, teach how to find surface area using the programming key on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

4. During the bell ringer time, teach the probability keys on the graphing calculator. If you aren't sure how to do this, see your MIS for help.

5. During the bell ringer time, review the various calculator keys you have covered during the two technology weeks of bell-ringers.

Week 21

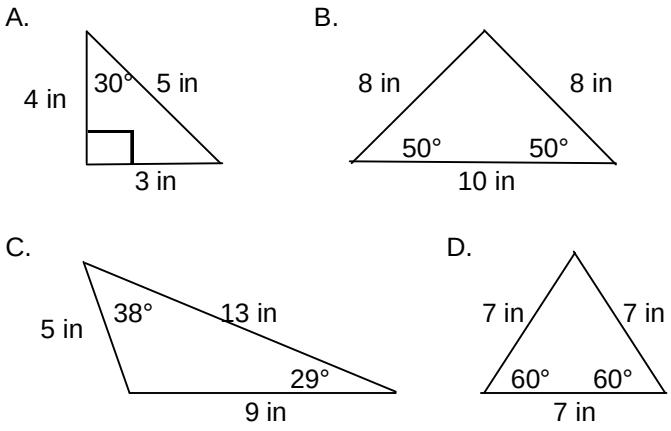
State Standards – 9.7.01, 9.7.02, 9.7.03, 9.7.04

1. Two sides of a triangle are the same length and one side is a different length. If the lengths are 12.65 cm and 8.19 cm, how many values are possible for the perimeter of the triangle? Find all of these perimeters.

2. Ms. McManus has purchased 4 pieces of wood to go around the outside of a sandbox. Two pieces of wood are 6 feet long and two pieces are 7 feet long. Using these pieces without cutting them, which of the following could be the shape of her sandbox?

Rectangle
Rhombus
Square
Pentagon

3. Name each triangle based on the length of its sides and angles. Fill in the missing angle.



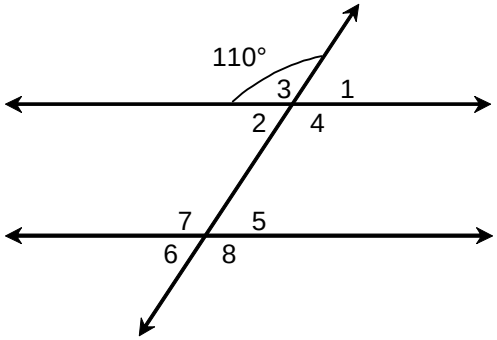
4. How many inches of rope would you need to tie up three bundles of hay that each has a diameter of 25 inches?

5. What is the area of a circle with a diameter of 70 yards?

Week 22

State Standards – 9.7.08, 9.7.09, 9.7.10

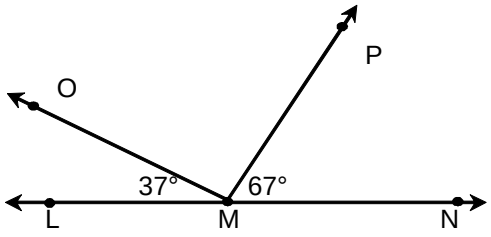
1. Lines A and B are parallel. Given the measure of ∠3, find the measure of the remaining angles.



2. Which shape has a total of six interior angles that add up to 720°?

3. A. Find the complement of a 73° angle.
   B. Find the supplement of a 112° angle.

4. Angle LMN is a straight angle. If ∠ LMO is 37° and ∠ PMN is 67°, what must be the measure of ∠ OMP?



5. Angles A and B are supplementary angles. If the measurement of angle A is 50°, what is measurement of angle B?

Week 23

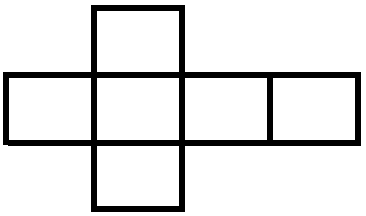
State Standards – 9.7.11

1. What is the sum of the number of vertices, the number of edges, and the number of faces on a cube? On a rectangular prism?

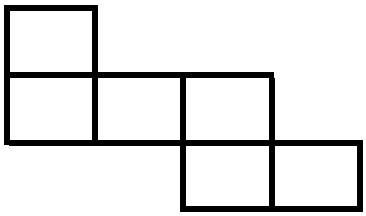
2. What is the sum of the number of vertices, the number of edges, and the number of faces on a triangular pyramid? On a triangular prism?

3. Which of the following figures can be folded to form cubes?

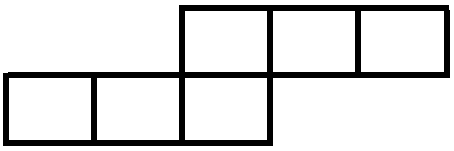
A.



B.



C.



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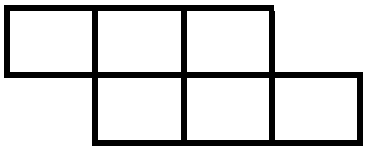

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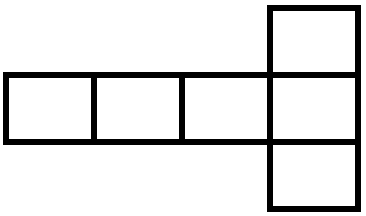

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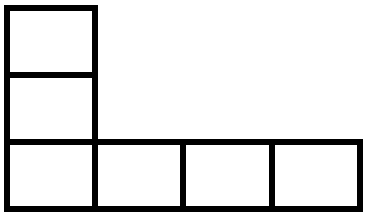
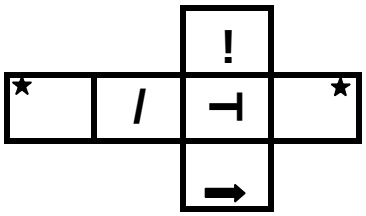
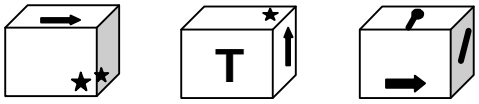


4. This diagram was cut out and folded along the dashed lines. Which of the three cubes was formed?





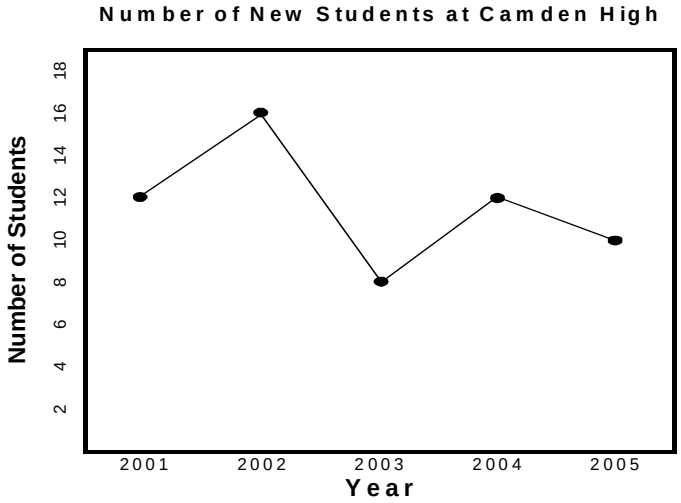
5. Sketch a net for a triangular pyramid. How many faces, edges, and vertices will the pyramid have?

   Sketch a net for a rectangular prism. How many faces, edges, and vertices will the prism have?

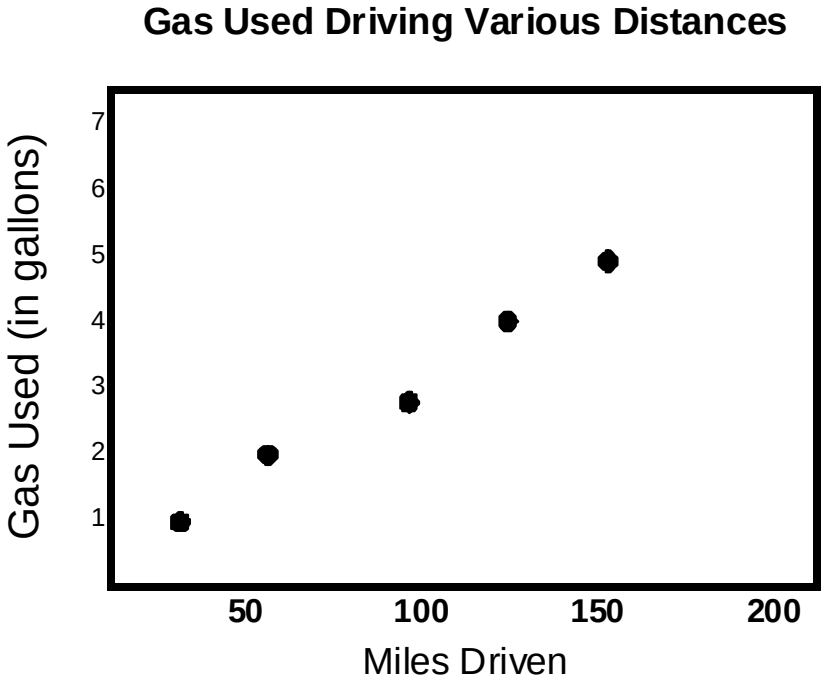
Week 24

State Standards – 10.7.01, 10.7.02, 10.7.03, 10.7.04, 10.7.05

1. The number of new students at Camden Junior High over five years is shown in the graph. Between which two years did the greatest change take place?

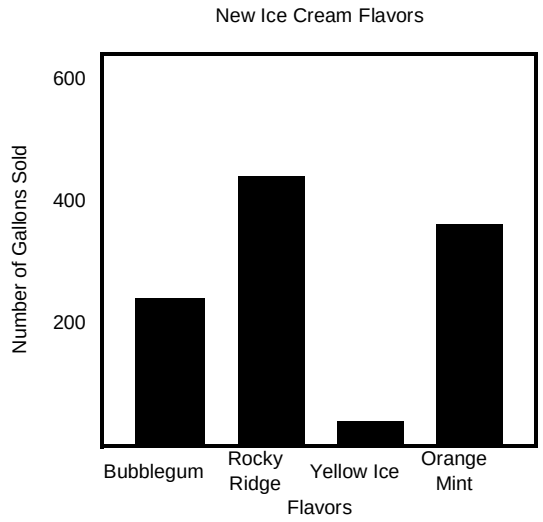


2. Look at the scatterplot below. Using a line of best fit, what can be concluded about the number of gallons that will be used in driving 200 miles?



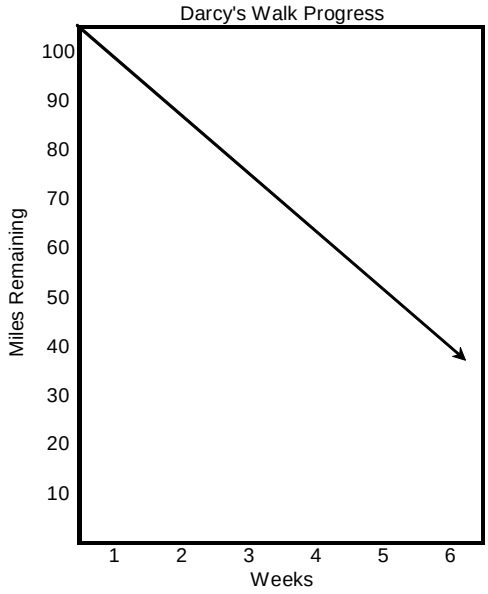
3. Kool Ice Cream Shop started serving several new flavors last month. Using the chart, which statement is true about the new flavors?

A. All flavors are equally popular.
B. Bubblegum is more popular than Rocky Ridge.
C. Yellow Ice is more popular than Bubblegum.
D. Yellow Ice is the least popular.



4. Darcy decided to walk 100 miles for charity. She is recording her progress using the following graph. After 6 weeks, she sees that she is 40 miles away from her goal. Once Darcy completes her graph, what will the x-intercept represent?

   A. The number of miles she walked each week
   B. The number of weeks it took to walk 60 miles
   C. The number of weeks it will have taken to reach her goal
   D. The number of miles she will have walked to reach her goal



5. Use the stem and leaf plot below to answer the questions.

7	2 5 5 8
8	4 7 9
9	2 2 3 6 9
10	0 1 5 8
11	4 7
12	0 5

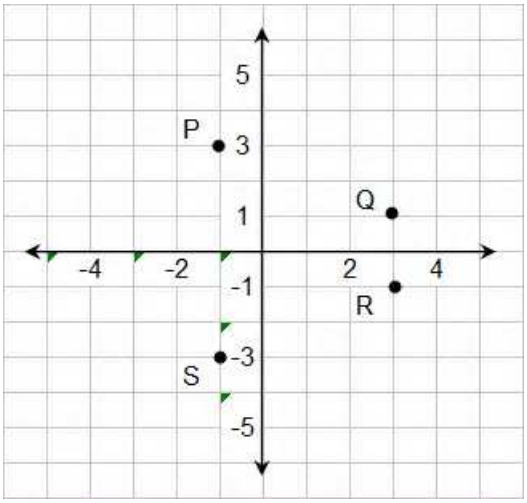
8 | 4 means 84 lb

A. What is the range of the data?
B. What are the modes?
C. What is the median?
D. What percent of the children have weights between 80 and 110 lb?

Week 25

State Standards – 8.7.07, 9.7.05, 9.7.05, 9.7.06, 9.7.15

1. Which point is located at (-1, 3)?



2. Which of the following describes the location of the point (-5, 5) on the coordinate plane?

   A. right 5, down 5
   B. left 5, down 5
   C. right 5, up 5
   D. left 5, up 5

3. Which point is in Quadrant IV on the Cartesian Plane?

   A. (-2, 2)
   B. (2, -2)
   C. (-2, -2)
   D. (2, 2)

4. A triangle is located on a coordinate grid so that two of its corner points are on the horizontal axis. What do these two points have in common?

5. Point A lies in Quadrant II. If you switch the coordinates of point A, in what Quadrant will the graph of this new point fall?

Week 26

State Standards – 6.7.02, 6.7.05, 6.7.06, 6.7.08

1. Find each sum or difference.

   A. –38 + 12
   B. 6 + (–13)
   C. –7 + 17
   D. –8 – (– 3)
   E. 11 – (– 4)
   F. 22 – 30

2. What can you tell about the sign of n if:

   A. 2n is positive?
   B. –n is positive?
   C. n^2 is positive?

3. Pythagoras was born in 580 B.C. Carl Friedrich Gauss was born in A.D. 1777. How many years apart were they born?

4. Use the following clues to find two integers:

- Both integers are even
- The sum of the integers is positive
- The product of the integers is – 96
- Neither integer is a square number
- Neither integer is a factor of the other
- Neither integer is a cube

5. $\square \bullet \triangle = 24$

$\square + \triangle = -10$

$\square =$ ___

$\triangle =$ ___

Week 27

State Standards – 8.7.06, 8.7.08

1. According to the chart, what must you do to “x” to get “y”?

x	y
6	2
3	1
24	8
1/3	1/9

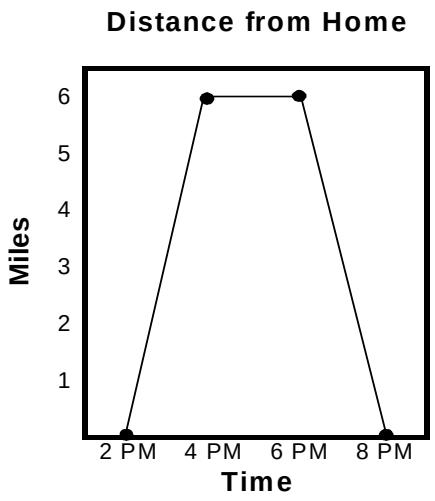
2. The following is a table of different whole number values for the length and width of rectangles with an area of 24 square meters.

Width	24	12	8	6	4	3	2	1
Length	1	2	3	4	6	8	12	24

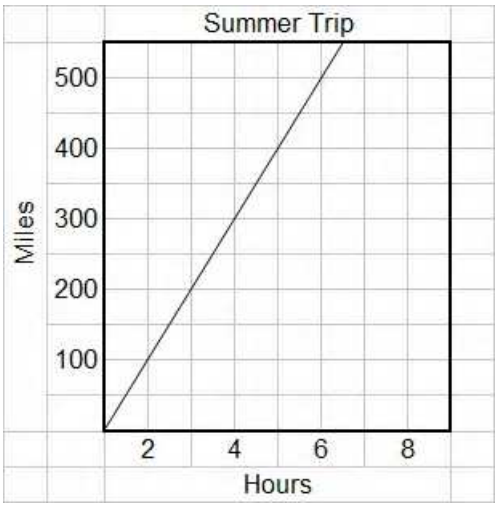
Which statement is true?

A. As the width increases, the length increases
B. As the width decreases, the length decreases
C. As the width decreases, the length increases
D. As the width increases, the lengths stay the same

3. Write a story for the following graph:

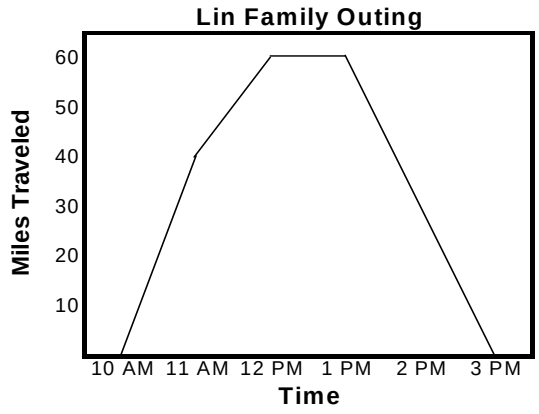


4. Make a table to match the information in the graph below.

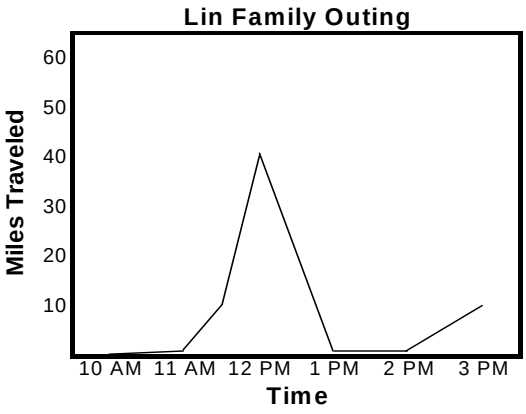


5. On Sunday, the Lin family went for a car ride at 10 AM. For the first hour, they drove at a speed of 40 miles per hour. In the second hour, traffic was heavy, so they only drove at 20 miles per hour. From 12 PM to 1 PM, they stopped for lunch and did not drive at all. After lunch, it started to rain, so they decided to go home. They drove at 30 miles per hour to get home. Which graph represents their trip?

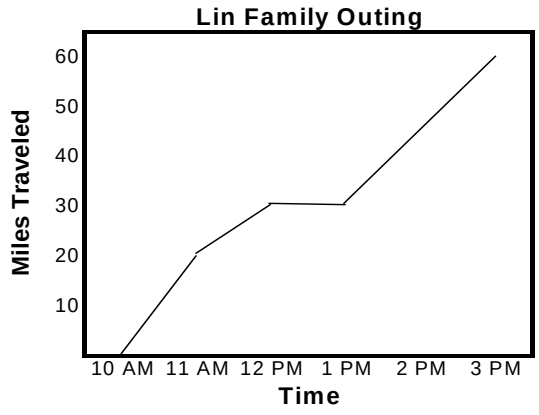
Graph A



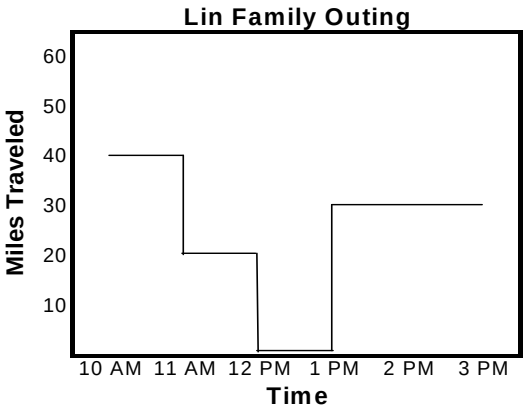
Graph B



Graph C



Graph D



Week 28

State Standards – 6.7.03, 6.7.05, 6.7.06, 6.7.08

1. Use >, < or = to compare each group.

   A. (1 – 0.5) _____ (1 – 0.6)
   B. (1 – 0.8) _____ (1 – 0.7)
   C. (1 – 1.0) _____ (1 – 0.9)

2. Ned needs 27 feet of wood to do a project. He has one board that is 5.67 feet and another board which is 6.72 feet in length. About how many feet of wood does he still need?

3. The product of a fraction and a whole number is 3. The product of another fraction and another whole number is also 3. If the two whole numbers are 4 and 9 what are the two fractions?

4. A bottle of soda is $\frac{2}{3}$ full. It has $6\frac{1}{3}$ ounces of soda in it. How much soda does the bottle hold when it is full?

5. Write a multiplication problem that has $\frac{2}{3}$ as the product.

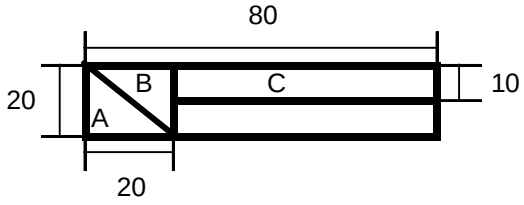
Week 29

State Standards – 6.7.03, 6.7.16, 6.7.17

1. What is 65% of 80?

2. Ms. Reynolds, the math teacher, was disappointed to say only 22% of her students passed the test. She has 68 students. How many failed?

3. Use the measurements on the figure to calculate what percent of the total area of the rectangle is in each of the regions A, B, and C.



4. A woman decides that if she earns $1,000 per year, she will give 1% to charity; if she earns $2,000, she will give 2% and so on. How much would the woman have to earn to give away all of her earnings? What amount of earnings allows the woman to keep the greatest amount of money for herself?

5. The Hamilton High School senior class has the following plans for the year after graduation. 77.8% plan to attend college. 8.1% plan to enter military service. 14% plan to do neither. Why doesn't the total of the three percents equal 100%?

Week 30

State Standards – Problem Solving Goal

1. How many three-digit positive integers are there?

2. Each row of passenger seats on an airplane has 5 seats. Two of the seats are on one side of the aisle and three seats are on the other side of the aisle. The outside seats are both next to windows. There are 96 passenger seats that are not along the aisle. How many passenger seats are along the aisle?

3. A group of 13 friends were planning a trip. On the night before they left they made a lot of phone calls. Each friend talked to every other friend at least once. What is the fewest number of phone calls that could have been made?

4. Carla is excited because her big brother Joe has just come back from six weeks of fishing for salmon in Alaska. Joe earned money in bonuses, and has promised Carla $10 if she can figure out how much he made. Each time Joe caught $500 worth of salmon, he got a bonus. The first time he received a $10 bonus. The second time, he got a $30 bonus. The third time he received $50, and the fourth time he received $70. During the time Joe spent fishing, he caught $500 worth of salmon on 21 days. If the bonuses continued at the same rate, how much bonus money did Joe make?

5. Evelyn is reading about Windemere Castle in Scotland. Many years ago, when prisoners were held in the various cells of the dungeon area, they began to dig passages connecting each cell to each of the other cells in the dungeon. If there were 20 cells in all, what is the fewest number of passages that had to be tunneled out over the years?

Week 31

State Standards – 7.7.02, 7.7.03

1. The area of a parallelogram is 99.2 cm^2. The base is 8 cm. How tall is the height?

2. What is the area of a triangle with a height of 7 feet and a base of 5 feet?

3. The area of a trapezoid is 152 m^2. Its two bases are 16 m and 22 m. What is the height?

4. Build a rectangle according to these clues.
    A. The rectangle has an area of more than 50 square units and less than 70 square units.
    B. Both the length and width are greater than 5 but less than 10.
    C. The perimeter is a multiple of 10.
    D. The width is an odd number and the length is a larger even number.
    E. The width and length are both whole numbers.

5. A rectangle has an area of 24 square meters and a perimeter of 22 meters. What are the dimensions of the rectangle?

Week 32

State Standards – 6.7.14, 6.7.15

1. Alvin is working as an apprentice to his father, a house painter, for the summer. They have a contract to paint several cottages. To get the right shade of green they have to mix 5 cans of teal blue with 3 cans of lemon yellow and 2 cans of eggshell white. If it takes 60 cans of paint to cover the cottages, how many cans of each color will they need?

2. At Happy Foods Groceries, you can buy a 5 lb package of ground beef for $11.50. At Riser Groceries, a 3 lb package of the same quality beef is $6.75. Which is the better buy?

3. If Joseph drove 45 miles in 1.5 hours, how far could he drive in seven hours at the same rate?

4. Carmen has a custard recipe that requires 6 eggs, 1 cup of sugar, 3 cups of milk, and 1 teaspoon of vanilla. However, she has only 4 eggs. She decides to adjust the recipe accordingly. How much milk will she need?

5. A 6-foot tall boy is standing next to a telephone pole. If the boy casts a shadow that is 9 feet long and the telephone pole casts a shadow that is 42 feet long, about how tall is the telephone?

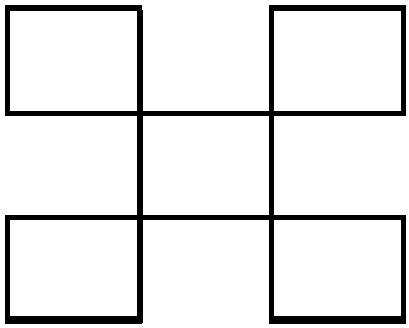
Week 33

State Standards – Problem Solving Goal

1. There are six teams in your baseball league. Each team plays the other teams only once. How many total games are played?

2. The Blacks, the Browns, the Whites, and the Greens (four married couples), are playing a card game. They are arranged at two separate tables. Use the clues below to help you figure where they are sitting.
   - No Black is across from a Green or a Brown
   - Married couples are not at the same table
   - Mary is across from Jennifer's husband
   - John's wife is to Mary's left and across from Arlene's husband
   - John is opposite Allen's wife
   - Paul's wife is on John's left and across from Mary's husband
   - John's partner is a Brown
   - Peter's wife is on Suzanne's right
   - Mary's partner is not a Black

3. The figure below shows five 1–by–1 squares constructed with toothpicks. How can you move two toothpicks to make six 1–by–1 squares? How can you move three toothpicks to make seven 1–by–1 squares?



4. At the first meeting of Kathy's backgammon club, the members decided to have a tournament to determine who their best players were. Each member played one game with every other member. How many games were played altogether if there are ten members in the club?

5. Carla is passing out red, white, and blue construction paper for an art paper. There are ten people in her group. Carla, who likes to show off, tells everyone to watch closely as she hands out the paper. The first person gets a red paper. Carla puts the second paper at the bottom of the stack. She gives the second person a white paper. Carla puts the fourth paper at the bottom of the stack and gives the third person a blue paper. Carla continues to pass out paper in a red, white and blue pattern and continues to put every other paper on the bottom of the stack until there is no more paper. How did she have to stack the colored paper so that she could pass it out this way?

Week 34

State Standards – 6.7.02, 6.7.05, 6.7.06, 6.7.08, 6.7.09

1. Simplify the following:
   A. $(4 + 3) \bullet 7 – 1$
   B. $10 – 20 \div 4$
   C. $3^2 \bullet 2 + 7$

2. Using four 4's and any operations (+, -, X, ÷) write an expression that equals 6.

3. Use order of operations to evaluate each expression.

   A. $5 + 5 \bullet 4^2 + 39 \div 3 + 10$
   B. $3 – 2 \bullet 3 – 2 \bullet 3 – 2$
   C. $10 \bullet 9 – 8 + 7 \div 6 – 5 \bullet 4$

4. Use order of operations to evaluate each expression.

   A. $2 \bullet 5 – (16 \div 4 + 2)$
   B. $(17 – 9) \bullet 4 – 1$
   C. $15 + 3 – 2 \bullet 5$
   D. $17 + 4 \bullet 2 + 2$
   E. $20 + 8 \div 4 – 4$

5. Place parentheses in the following equations to make each equation true.

A. 7 – 4 ● 6 + 4 = 30
B. 6 + 2 ● 3 – 4 = 20
C. 9 – 4 ● 2 + 5 = 15
D. 5 ● 8 – 6 ÷ 2 = 5

Week 35

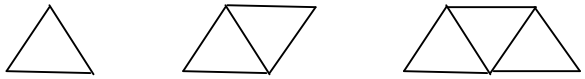
State Standards – Problem Solving Goal

1. Tubby Twophat was determined to win the pie-eating contest at the contest at the county fair. He went into training for 6 days. Each day he ate 4 more pies than the day before. Tubby ate 150 pies while in training. How many pies did he eat each day?

2. At Micron Middle School, each student must take two of these classes: art, music, keyboards, cooking, or shop. How many different combinations does the student have from which to choose?

3. Karen, Darius, Rose, Macey, Brittney, and Al are all eating dinner at a rectangular table. Rose is the only left-handed person and must sit on an end or a corner of the table. Rose is seated next to Brittney. Macey and Karen sit next to each other. Macey is sitting on the end. Brittney and Al are seated together and Darius is two seats away from Brittney. How are they seated?

4. The perimeter of one triangle is 3 units. For two connected triangles, the perimeter is 4 units. For three connected triangles, the perimeter is 5 units. What is the perimeter of 50 connected triangles? What is the perimeter for a row of n triangles?



Perimeter 3 units | Perimeter 4 units | Perimeter 5 units

5. Kobe Bryant scored 30 points on 2-point and 3-point goals. He hit 5 more 2-pointers than 3-pointers. How many of each did he score?

1st day plus 2nd day plus 3rd day plus 4th day plus 5th day = 100
x + (x + 6) + (x + 12) + (x + 18) + (x + 24) = 100
5x + 60 =100
5x = 40
x = 8

8, 14, 20, 26, 32 = 100

10
1 + 2(10)=21
1 + 2(21) = 43
1 + 2(43) = 87
1 + 2(87) = 175
1 + 2(175) = 351
1 + 2(351)= 703
1 + 2(703) = 1407
1 + 2(1407) = 2815
1 + 2(2815) = 5631
1 + 2

1
2
4
8
16
32
64
128
+256
511

1
2
4
8
16
32
64
127

128
2 64
32 2
8 4
2 4 2 2
2 2

2^7

$2^7 = 128$

$2^8 = 256$

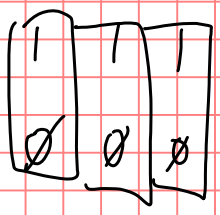
$2^9 = 512$

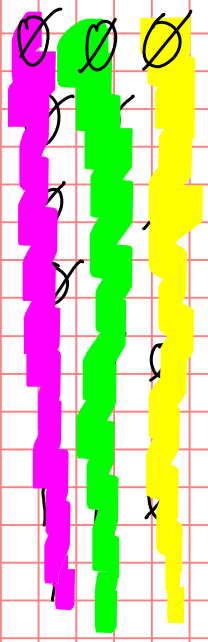
$2^n =$

total
$= 2^{n+1}$

$2^{16} = 65536$

65535





$2 = 2^1 = 1$ switch

$4 = 2^2 = 2$

$8 = 2^3 = 3$

$16 = 2^4 = 4$

denary

binary

1	
10	
11	
100	
101	
110	
111	
1000	
1001	

$2^7\ 2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0$

128 64 32 16 8 4 2 1

00000000	
00100000	= Spacebar
01000001	= "A" = 65
01000010	"B" = 66
00110000	

$10^5\ 10^4\ 10^3\ 10^2\ 10^1\ 10^0$

"0" = 48

Decimate

There are only 10 types of people in the world. Those who understand binary and those who don't.