

Name: \_\_\_\_\_

CC2, Class 5, ElShakhs

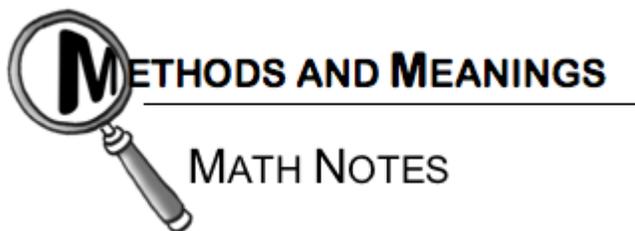
# Weekly Math Homework Packet 01-27 to 02-03

Please have this homework sheet out next to your homework at the beginning of the period.

Homework Effort Score				Assign Date	Due Date	Section	Classwork	Homework
100%	75%	50%	Missing					
				Mon 1/27	Tues 1/28	5.2.3	5-43 to 5-45	5-49 to 5-53
				Tues 1/28	Wed 1/29	5.2.4	5-54 to 5-58	5-60 to 5-64
				Wed 1/29	Fri 1/31	5.2.5 5.2.6	5-65 to 5-68  5-76 to 5-77	5-71 to 5-75  5-83 to 5-87
				Fri 1/31	Mon 2/03	5.2.6	5-79 to 5-81	5-88 to 5-92

Remember – Homework help available at [www.cpm.org](http://www.cpm.org)

## Tuesday Homework:



## Probability of Compound Events

Sometimes when you are finding a probability, you are interested in either of two outcomes taking place, but not both. For example, you may be interested in drawing a king or a queen from a deck of cards. At other times, you might be interested in one event followed by another event. For example, you might want to roll a one on a number cube and then roll a six. The probabilities of combinations of simple events are called **compound events**.

To find the probability of *either* one event *or* another event that has nothing in common with the first, you can find the probability of each event separately and then add their probabilities. Using the example above of drawing a king or a queen from a deck of cards:

$$P(\text{king}) = \frac{4}{52} \text{ and } P(\text{queen}) = \frac{4}{52} \text{ so } P(\text{king or queen}) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$$

For two independent events, to find the probability of *both* one *and* the other event occurring, you can find the probability of each event separately and then multiply their probabilities. Using the example of rolling a one followed by a six on a number cube:

$$P(1) = \frac{1}{6} \text{ and } P(6) = \frac{1}{6} \text{ so } P(1 \text{ then } 6) = \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$$

Note that you would carry out the same computation if you wanted to know the probability of rolling a one on a green cube and a six on a red cube if you rolled both of them at the same time.

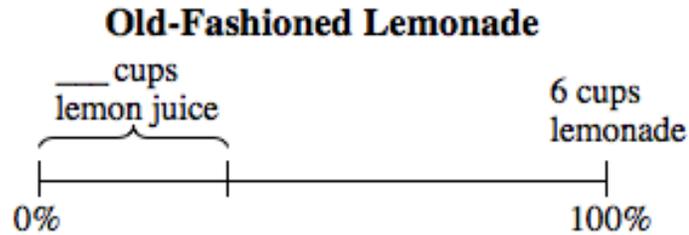


**5-60.** Maggie was at the state fair and decided to buy a sundae from an ice cream stand. The ice cream stand had four flavors of ice cream (chocolate, vanilla, mint chip, and coconut) and two toppings (hot fudge and caramel). How many different sundaes could Maggie create using one scoop of ice cream and one topping? Make a probability table to support your answer.


**5-61.** The Aloha Stadium in Honolulu, Hawaii, has seats for 50,000 people. At an upcoming football game, a company is planning to give away free hats to people based on where they are sitting.

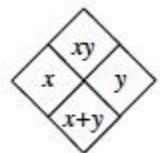
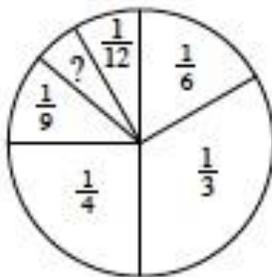
- The seats are divided into 40 different sections. If hats are given in only 5 sections, what is the probability of a guest's sitting in a section that gets a hat?
- The company is going to choose three rows in each section to win the hats. There are 46 rows in a section. If you are sitting in a winning section, what is the probability that you are not sitting in a winning row?
- The company plans to give away 750 hats. If you buy a ticket to the game, what is the probability that you will receive a hat?

5-62. A lemonade recipe calls for using a ratio of 2 cups of lemon juice for every 4 cups of water.

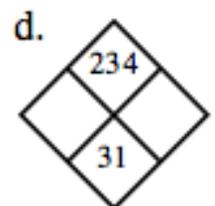
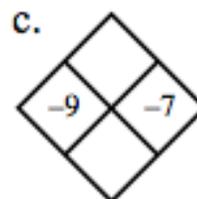
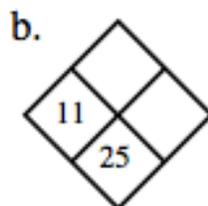
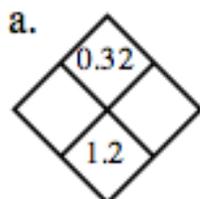


- Complete the diagram above to show the percent of lemonade that is water and the percent that is lemon juice.
- What is the ratio of lemon juice to total liquid?
- Angel made 10 cups of lemonade. She used 3 cups of lemon juice in her mixture. Did she follow the same recipe? In other words, did she use the same ratio of lemon juice to total liquid?

5-63. Robert found an old game in a closet and wanted to play it. However, a portion of the spinner shown at right could not be read. Find the missing portion of the spinner for Robert. Use a common denominator of 36 to add all of the know parts together.



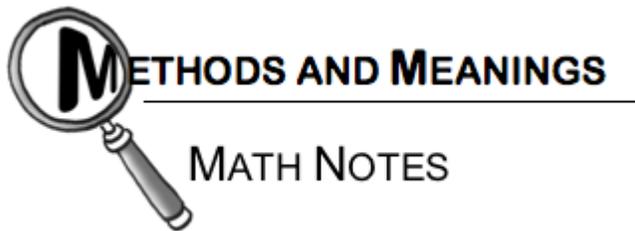
5-64. Copy and complete each of the Diamond Problems below. The pattern used in the Diamond Problems is shown at right.



## Wednesday Homework:

### 5-70. LEARNING LOG

In your Learning Log, describe the methods for organizing outcomes in a probability situation that you have learned in the past few lessons, such as systematic lists, probability tables and probability trees. Describe situations for which each tool is appropriate and any advantages and disadvantages with using it. You may want to include an example from your recent work to help you explain. Title this entry “Methods to Organize Probability Outcomes” and label it with today’s date.

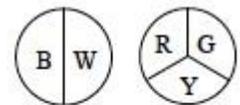


### Probability Models for Multiple Events

To determine all possible outcomes for multiple events when *both* one event *and* the other occur, there are several different models you can use to help organize the information.

Consider spinning each spinner at right once.

If you use a plan or a pattern to find all of the outcomes in an event, you are making a **systematic list**. For example, assume that you first spin B on spinner 1. Then, list all of the possible outcomes on spinner 2. Next, assume that your first spin is W on spinner 1, and complete the list.



**Systematic List**

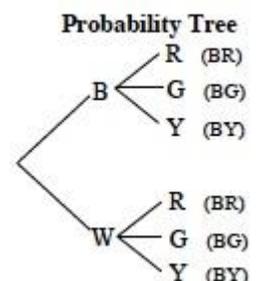
BR    WR  
BG    WG  
BY    WY

A **probability table** can also organize information if there are exactly two events. The possibilities for each event are listed on the sides of the table as shown, and the combinations of outcomes are listed inside the table. In the example at right, the possible outcomes for spinner 1 are listed on the left side, and the possible outcomes for spinner 2 are listed across the top. The possible outcomes of the two events are shown inside the rectangle. In this table, the top and side are divided evenly because the outcomes are equally likely. Inside the table you can see the possible combinations of outcomes.

**Probability Table**

	R	G	Y
B	BR	BG	BY
W	WR	WG	WY

A **probability tree** is another method for organizing information. The different outcomes are organized at the end of branches of a tree. The first section has B and W at the ends of two branches because there are two possible outcomes of spinner 1, namely B and W. Then the ends of three more branches represent the possible outcomes of the second spinner, R,G, and Y. These overall possible outcomes of the two events are shown as the six branch ends.



### 5-71. WALKING THE DOG

Marcus and his brother always argue about who will walk the dog. Their father wants to find a random way of deciding who will do the job. He invented a game to help them decide. Each boy will have a bag with three colored blocks in it: one yellow, one green, and one white. Each night before dinner, each boy draws a block out of his bag. If the colors match, Marcus walks the dog. If the two colors do not match, his brother walks the dog. Marcus's father wants to be sure that the game is fair. Help him decide.



- Make a probability tree of all of the possible combinations of draws that Marcus and his brother could make. How many possibilities are there?
- What is the probability that the boys will draw matching blocks? Is the game fair? Justify your answer.

**5-72.** For Shelley's birthday on Saturday, she received:

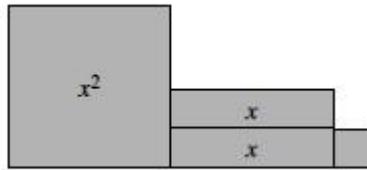
- Two new shirts (one plaid and one striped);
- Three pairs of shorts (tan, yellow, and green); and,
- Two pairs of shoes (sandals and tennis shoes).

On Monday she wants to wear a completely new outfit. How many possible outfit choices does she have from these new clothes? Draw a diagram to explain your reasoning.

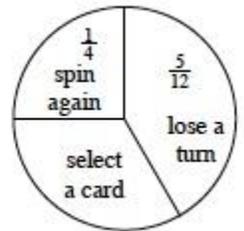
**5-74.** Evaluate each expression.

- $7 + (-3)$
- $(10)(-5)$
- $-5 + 6$
- $(-2) \div (-2)$

**5-75.** Write expressions for the perimeter and the area of this algebra tile shape. Then simplify each expression by combining like terms.

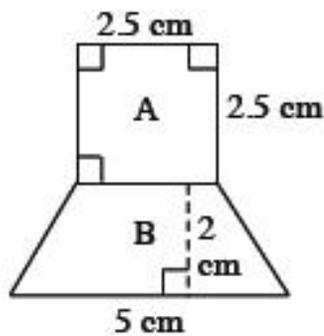


**5-83.** Darnell designed the spinner at right for a game. It still has one incomplete section.



- Help him figure out the probability of selecting a card on any turn. Show how you got your answer.
- What is the probability that on any turn you will not get to spin again?
- Which is more likely: to lose a turn or to select a card? Show how you know.

**5-84.** Manuel used pattern blocks to build the shape below. The block marked A is a square, and B is a trapezoid. Find the area of Manuel's shape.



**5-85.** Rachel is collecting donations for the local animal shelter. So far she has collected \$245, which is 70% of what she hopes to collect. How much money does Rachel plan to collect for the shelter? Show your work. Use a linear model (percents on the bottom).

**5-86.** Darnell is designing a new game. He will have 110 different-colored blocks in a bag. While a person is blindfolded, he or she will reach in and pull out a block. The color of the block determines the prize according to Darnell's sign at right.

blue → small toy
purple → hat
green → large stuffed animal

- If he wants players to have a 60% probability of winning a small toy, how many blue blocks should he have?
- If he wants players to have a 10% probability of winning a large stuffed animal, how many green blocks should he have?

**5-87.** Simplify the following expressions.

$$1\frac{1}{2} + 2\frac{1}{8}$$

$$\frac{4}{5} - \frac{2}{3} + \frac{1}{6}$$

$$5\frac{3}{5} - 1\frac{4}{5}$$

- Friday Homework:**

**5-88.** Lucas is having yogurt and an apple for a snack. There are five containers of yogurt in the refrigerator: three are raspberry, one is vanilla, and one is peach. There are also two green apples and three red apples.



- If he reaches into the refrigerator to get a yogurt without looking, what is the probability that Lucas will choose a raspberry yogurt?
- What is the probability that he will choose a red apple if it is the first item he selects?
- What is the probability that Lucas will eat a raspberry yogurt and a red apple?

**5-89.** A bag contains 3 red, 5 yellow, and 7 purple marbles. Find the probability of drawing a purple marble followed by a red marble. The first marble is put back in the bag between draws.

**5-90. (bonus)** Use graph paper to complete parts (a) through (c) below.

Draw an  $xy$ -coordinate graph and label each axis. Plot the following ordered pairs:  $(2, 3)$ ,  $(-2, 3)$ ,  $(-2, -3)$ ,  $(2, -3)$ . Connect the points in the given order as you plot them. Then connect the fourth point to the first one.

Describe the shape on your graph. What is its area? What is its perimeter?

Change only two points so that the shape has an area of 32 square units. List your points. Is there more than one answer?

**5-91.** Jerry bought some pears at the store. He paid \$4.59 for 5.4 pounds of pears. What is the unit price of the pears?

**5-92.** Evaluate the following expressions using the order of operations.

a.  $7 \cdot 8 - 4(6 - 2) + 18$

b.  $6^2 - (8 \cdot 3) + 2^2(7 \cdot 3)$

c.  $\frac{14}{2} - 3(8 - 6) + 7^2$

d.  $-9 - 3(7 - 2) + \frac{24}{3}$