



Probability

**Including Released Test Items
Grades 4 & 5
Virginia Standards of Learning**



The picture shows all the candy that will be placed in a machine. Each time the handle on the machine is pulled, 1 candy comes out.



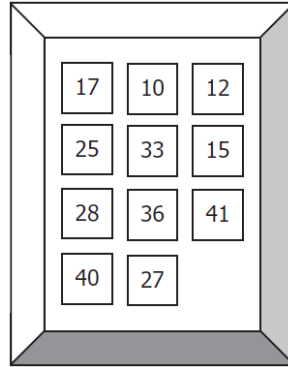
Alexa will pull the handle on the machine. Which color of candy is *least likely* to come out?

- A Green
- B Yellow
- C Pink
- D Blue

2008~grade 4



A box contains 11 number tiles that are the same shape and size as shown.



F	$\frac{1}{11}$
G	$\frac{1}{4}$
H	$\frac{4}{11}$
J	$\frac{4}{7}$

If Jason picks one tile from the box without looking, what is the probability that the number on the tile will end with 0 or 5 ?

2008~grade 4



37 The table shows the number of coupons a store mailed and the value of each.



Store Coupons Mailed Out

Value of Coupon	Number Mailed Out
\$25	4,950
\$50	40
\$100	10

Mr. James will receive one of the coupons.

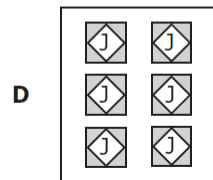
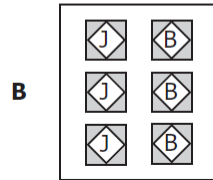
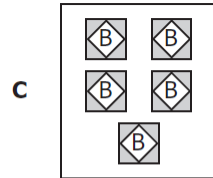
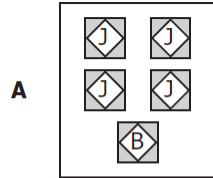
Which *best* describes the chance that it will be a \$100 coupon?

- A Certain
- B Likely, but not certain
- C Unlikely, but not impossible
- D Impossible

2008~grade 4



39 Keisha will pick one tile from a box without looking. From which of the following boxes is she *certain* to pick a tile with a "J" on it?





2008~grade 4



The table below shows the cubes Alex found in a box in the math closet.

Cubes in a Box

Color	Number of Cubes
 Red	5
 Blue	7

What is the probability the first cube Alex takes from the box without looking will be a blue cube?

F $\frac{5}{12}$

H $\frac{5}{7}$

G $\frac{7}{12}$

J $\frac{7}{5}$

2008~grade 4



The table shows the number of each color of marble Rodney has in a box.



Which question about the marbles can Rodney use knowledge about probability to solve?

Color of Marble	Number
Red	14
Yellow	8
Blue	11

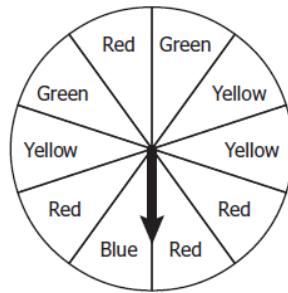


- F What is the total number of marbles in the box?
- G What is the chance of taking a yellow marble from the box on the first draw?
- H How many red marbles are in the box?
- J How many more blue marbles than red marbles are in the box?

2008~grade 5



Trent used the spinner shown to play a board game. Each section of the spinner is the same size.



What is the probability the arrow will land on a section labeled green on Trent's first spin?



- F 0.1
- G 0.2
- H 0.3
- J 0.4

2008~grade 5



Mariko must write a report. The chart shows the different countries and topics from which she can choose.

Class Report Choices	
Country	Topic
France	Geography
Japan	Wildlife
Egypt	History

- A
- France, Geography
 - France, Wildlife
 - France, History
 - Japan, Geography
 - Japan, Wildlife
 - Japan, History
 - Egypt, Geography
 - Egypt, Wildlife
 - Egypt, History

- C
- France, Geography
 - France, History
 - Japan, Geography
 - Japan, Wildlife
 - Egypt, History

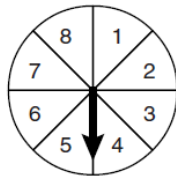
- B
- France, Geography
 - France, History
 - Japan, Geography
 - Japan, Wildlife
 - Egypt, Geography
 - Egypt, History

- D
- France, Geography
 - Japan, Wildlife
 - Egypt, History

2008~grade 5



34 Brent is using the spinner shown below to play a game. Each section of the spinner is the same size.



What is the probability the arrow will land on a section labeled 4 or 5 on Brent's next spin?

F $\frac{1}{8}$

H $\frac{1}{6}$

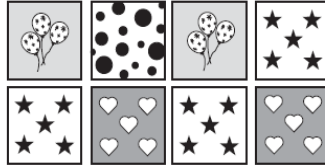
G $\frac{2}{8}$

J $\frac{2}{6}$

2007~grade 5



Mrs. Garrison has these sheets of wrapping paper.



Which of the following questions about these sheets of wrapping paper could you use probability to solve?



- A How many different kinds of wrapping paper does Mrs. Garrison have?
- B How many sheets of wrapping paper does Mrs. Garrison have?
- C If Mrs. Garrison uses 1 sheet of wrapping paper, how many will be left?
- D If Mrs. Garrison picks 1 sheet of wrapping paper without looking, what kind will it most likely be?



2007~grade 5



Matt has two coins to flip. Each coin has an equal chance of landing on heads or tails. Which question about the coins requires knowledge of probability?



- A What will Matt buy with the two coins?
- B What is the total value of the two coins Matt flipped?
- C What year is stamped on each coin?
- D What is the chance both coins will land on heads after one flip?



2007~grade 5



Martin will glue a design he made onto a paper or a plastic plate. Then he will decorate the plate with one of the materials listed in the chart below.

Plate Designs

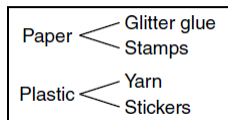
Kind of Plate	Materials
Paper	Glitter glue Stamps Yarn Stickers
Plastic	



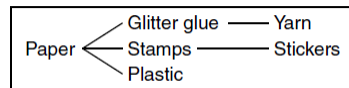
Which tree diagram shows all the possible combinations of 1 kind of plate and 1 material that Martin can make?



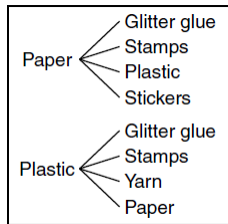
F



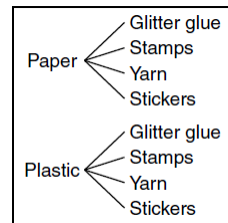
G



H



J



2007~grade 5



Yolanda has 10 red tomatoes and 2 green tomatoes in a bag. All the tomatoes are the same size. If Yolanda takes 1 tomato from the bag without looking, which *best* describes the chance it will be a green tomato?



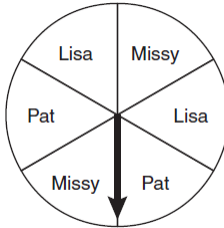
- A Certain
- B Likely, but not certain
- C Unlikely, but not impossible
- D Impossible



2007~grade 4



Pat and her friends will use the following spinner in a game.
Each section of the spinner is the same size.



If Pat spins first, what is the probability the arrow will land on a section labeled Missy?



- | | | | |
|----------|---------------|----------|---------------|
| F | $\frac{1}{6}$ | H | $\frac{2}{4}$ |
| G | $\frac{2}{6}$ | J | $\frac{4}{6}$ |



2007~grade 4



Terrell put 25 marbles in a bag. It is certain that the first marble taken from the bag will be red. Which is the number of red marbles in the bag?



- F** 0
G 5
H 20
J 25



2007~grade 4



Jason rolls a cube that has a different one of the following shapes on each face.



What is the probability the cube will land on a face with a star on Jason's first roll?



A $\frac{1}{6}$

C $\frac{5}{6}$

B $\frac{1}{5}$

D $\frac{6}{1}$



2007~grade 4



33 Irene has a group of counters like the ones pictured below. In the group are 9 counters with a star on them and 1 counter without a star.



If one counter is chosen from the group without looking, which of the following best describes the chances that it will be the one *without* a star?

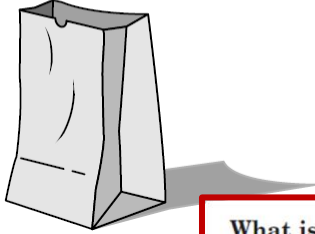
- A Certain
- B Likely, but not certain
- C Unlikely, but not impossible
- D Impossible



2005~grade 5



Manuel has 9 milk chocolate candy bars and 1 dark chocolate candy bar in a bag. All the candy bars are the same size and shape.



What is the probability that the first candy bar taken from the bag without looking will be milk chocolate?

F $\frac{9}{1}$

H $\frac{1}{9}$

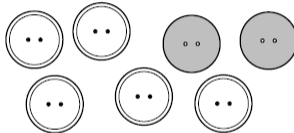
G $\frac{9}{10}$

J $\frac{1}{10}$

2005~grade 5



Andrew has these buttons to use for a design.



Which of the following questions about these buttons could you use probability to solve?

- A How many more white buttons than gray buttons does Andrew have?
- B How many buttons does Andrew have in all?
- C If Andrew gives 2 buttons to Cissy, how many will be left?
- D If Andrew picks 1 button without looking, what color is it most likely to be?

2005~grade 5

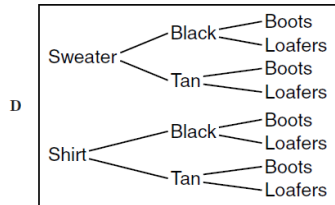
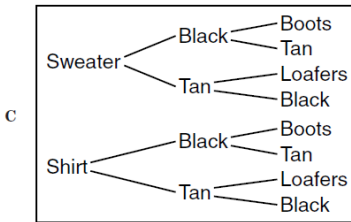
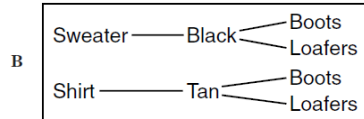
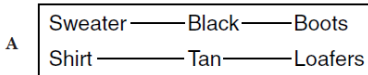
2005~grade 5



The chart below shows the choices Ms. Diego has for getting dressed.

Top	Pants	Shoes
Sweater	Black	Boots
Shirt	Tan	Loafers

Which tree diagram shows all the possible combinations of 1 top, 1 color of pants, and 1 kind of shoes?



Nancy has 2 quarters, 5 dimes, 1 nickel and 6 pennies in her pocket. Which of the following questions about the coins could you use probability to solve?

- F What is the total value of these coins?
- G How many more pennies than nickels does Nancy have?
- H If Nancy takes 1 coin from her pocket without looking, what kind of coin is it most likely to be?
- J If Nancy finds 1 more dime, how many coins will she have then?

2004~grade 5



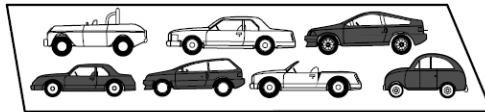
Mrs. Hunter has a box with 5 unsharpened pencils and 30 sharpened pencils. If she takes out 1 pencil without looking, what are the chances that the pencil she gets will be sharpened?

- A Certain
- B Likely but not certain
- C Unlikely but not impossible
- D Impossible

2004~grade 5



Gil has these model cars on a shelf.



If he takes 1 car off the shelf without looking, what is the probability that it will be white?

F $\frac{1}{3}$

H $\frac{1}{7}$

G $\frac{3}{4}$

J $\frac{3}{7}$

2004~grade 5

2004~grade 5



Shirt	Shorts	Shoes
White	Red	Sneakers
	Blue	Sandals

Which diagram shows all the possible combinations of 1 shirt, 1 pair of shorts, and 1 kind of shoes?

