Write down pairs of fractions that total 1.

$\frac{2}{3} + \frac{1}{3}$

$\frac{8}{16} + \frac{8}{16}$

$\frac{95}{100} + \frac{5}{100}$

$\frac{4}{11} + \frac{7}{11}$

$\frac{4}{6} + \frac{2}{6}$

$\frac{82}{400} + \frac{318}{400}$

Heads I win, tails you lose

Probability

The chances are..you'll be good at this.

Impossible

Tomorrow I will be 6ft tall

unlikely

throwing a dice and getting a 1

equally likely

throwing a coin and getting a head

likely

If you ask someone at random, they will have a tv

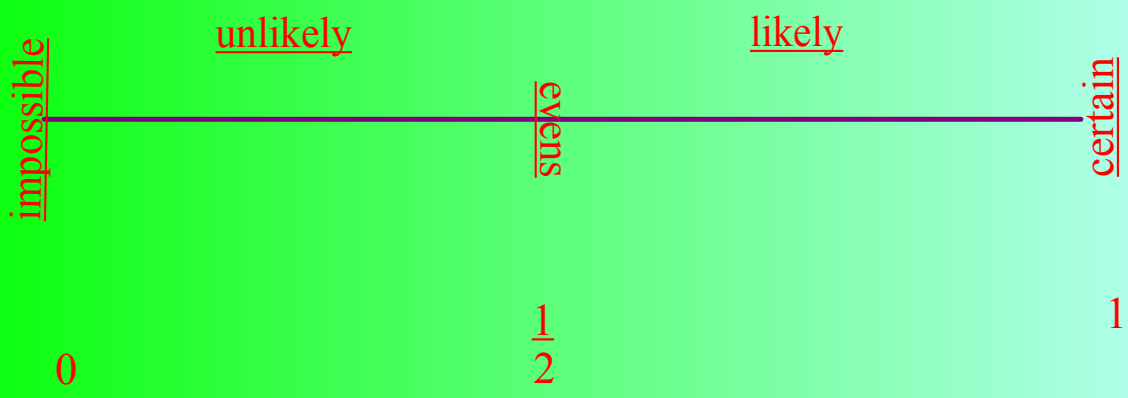
Certain

Every maths text book will have numbers in it.

There are adults and children in this school, so the chances of an adult walking through the door is 1/2.
True or false?

Can you think of some events that have an evens chance of occuring?

The Probability Scale: Using words and fractions

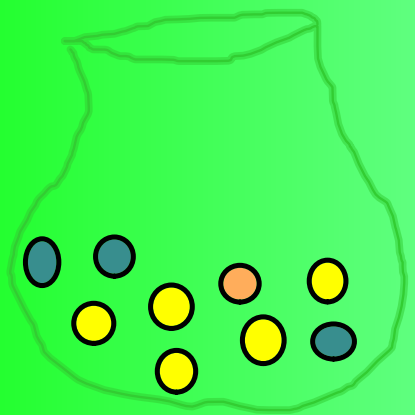


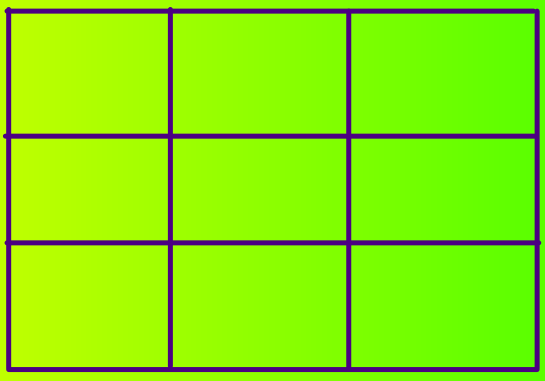
What are the chances....?

What is the probability....?

p(not getting a 6)=

p(getting a 6)=





Two dice bingo

A sample-space diagram to show the outcomes for rolling two dice.

+	1	2	3	4	5	6
1	2	3	4	5		
2						
3						
4						
5						
6						

p(0)= $\frac{0}{36}$ p(5)= p(10)=

p(1)= $\frac{0}{36}$ p(6)= p(11)=

p(2)= $\frac{1}{36}$ p(7)= p(12)=

p(3)= p(8)= p(13)=

p(4)= p(9)=

Extension: Find

1) p(even no.)=

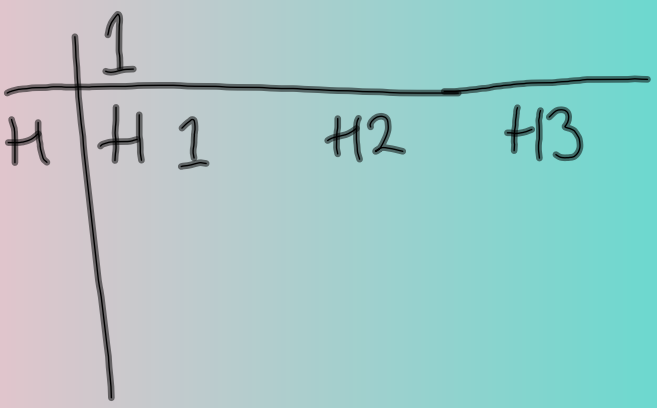
2) p(prime no.)=

3) p(square no)=

4) p (not a 5) =

5) p (not a 7)=

page 171 ex 8.7 start at question 2



The Great Horse race

Something to think about..

Tomorrow either it will rain or it won't rain, so the probability of it raining is 1/2.

Next door is a family with 4 boys. The next child will most probably be a girl.

If you throw a coin 50 times and get 48 heads and 2 tails the coin must be biased.

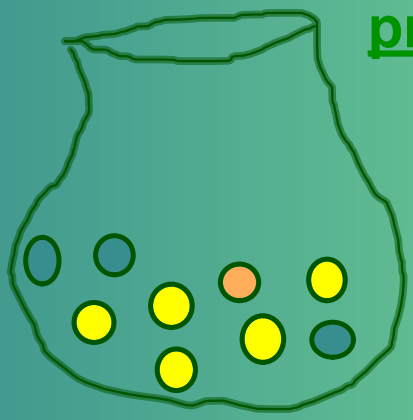
Everyone knows that some people are luckier than others.
And everyone has good days and bad days.
So the probability of throwing a 6 on a dice depends on who throws it and when.

If you throw a coin 50 times you will get 25 heads and 25 tails.

Bag A contains 4 red counters and 2 blue counters.
Bag B contains 5 red counters and 5 blue counters.
You are more likely to pick a red from bag A than you are from bag B.

True or false?

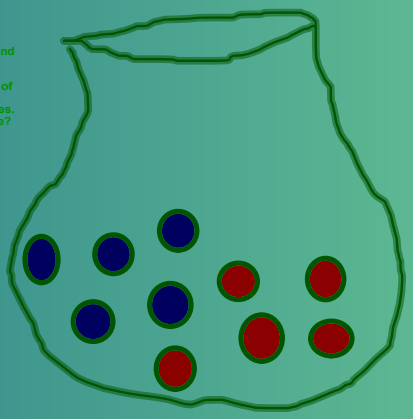
Using fractions to calculate probability



$p(o) = \frac{1}{9}$

$p(y) = \frac{5}{9}$

$p(b) = \frac{3}{9}$



if I add an extra blue and an extra red the probability of drawing a blue changes. True or false?

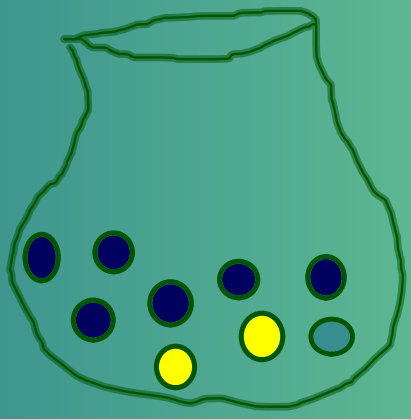
$p(r) = \frac{5}{10} = \frac{1}{2}$

$p(r_2) = \frac{6}{12} = \frac{1}{2}$

8:2

1) a $p(\text{yellow}) =$

b $p(\text{green}) =$



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Listing Outcomes

Sometimes the easiest way to show outcomes is simply to list the possibilities.
The main weakness of this strategy is that is easy to forget something.
Work systematically and you will be fine!

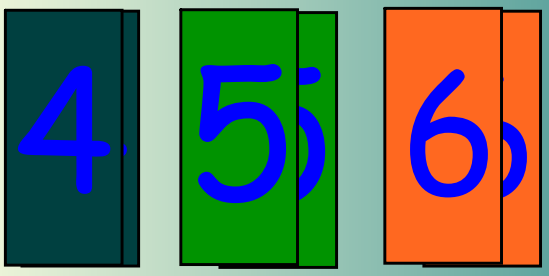
List the possible outcomes for throwing a dice and a coin.

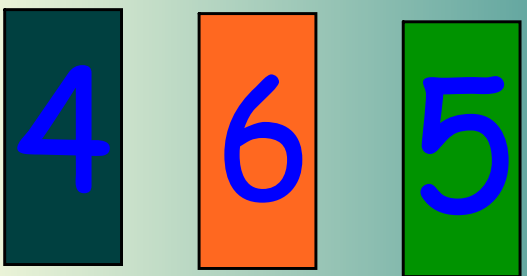
A coin + a dice

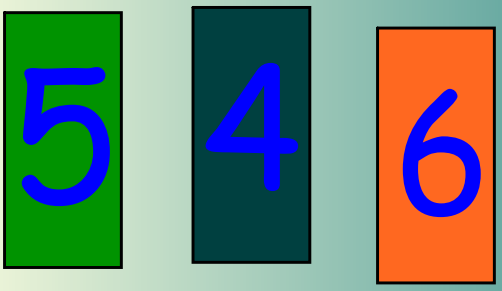
H 1
H 2
H 3
H 4
H 5
H 6

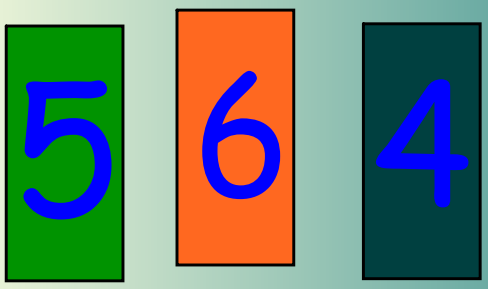
T 1
T 2
T 3
T 4
T 5
T 6

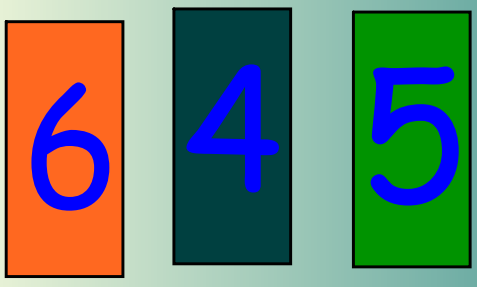
How many ways can you arrange these cards?

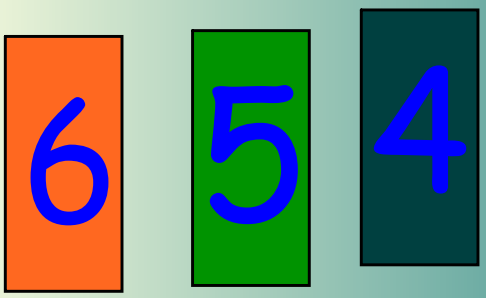




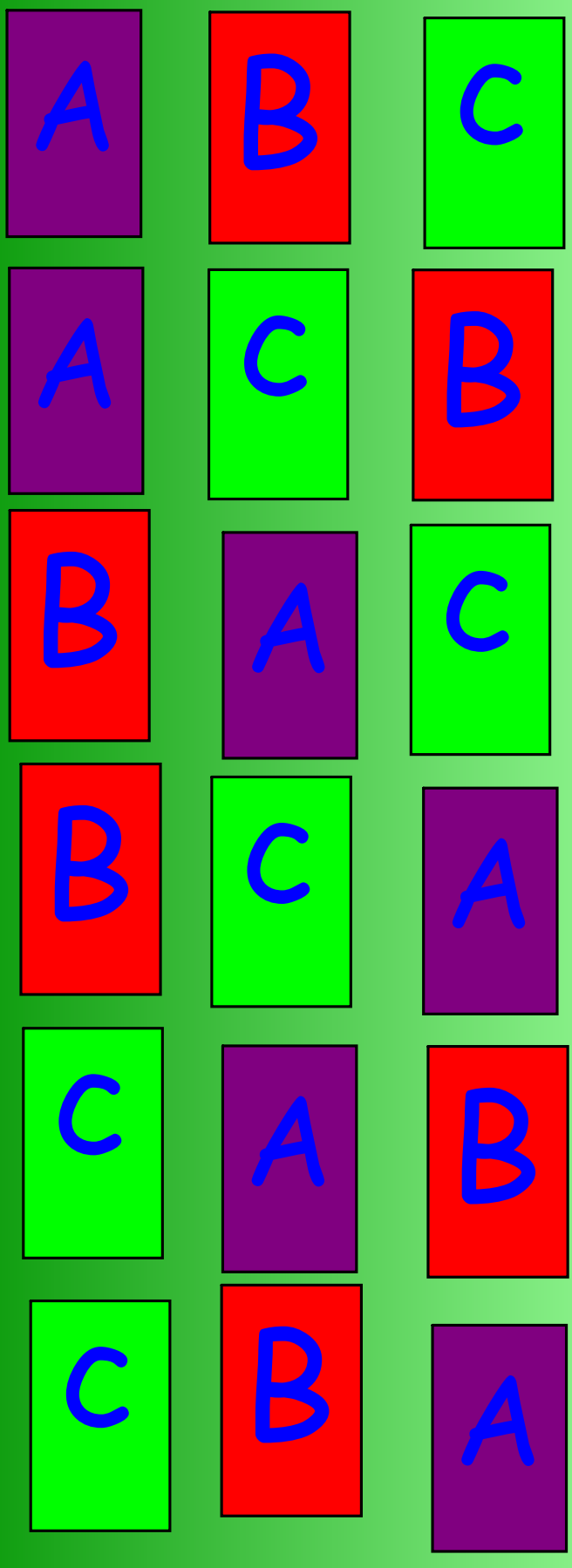








How many ways can you arrange the letters ABC?



Menu

Starters:
Melon
Green salad

Main Course:
Roast beef
Macaroni cheese
Pizza

What are the different combinations you could eat?

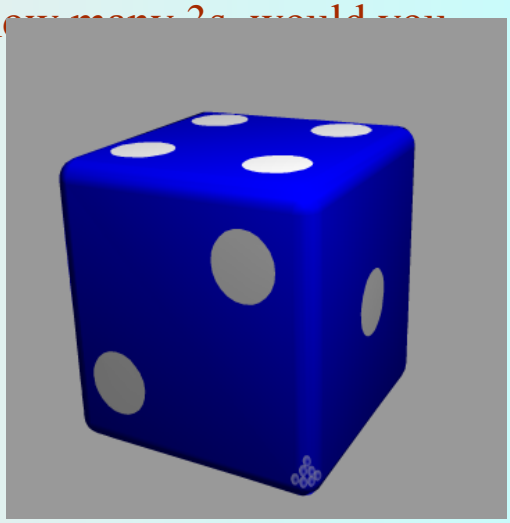
p174 1 ?
2
7

Ext p176
qu 3

Expected Outcomes

I throw a dice 12 times: how many 3s would you expect?

Is this certain?



Dice score	Tally	Frequency
1		
2		
3		
4		
5		
6		

Probability experiments

What's the probability of drawing out a blue cube?

Make a table:

Colour	tally

Draw out 10 cubes (one at a time).
Make a hypothesis about the contents of the box.
Draw out 10 more cubes.
What do you think now?
Now draw out 10 more.

simulation grid

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Adding to 1

The probability of you being invited to tea with the queen is about 0.001

The probability of Mr Matthews hauling one of you out for a good telling off is 1/20.

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Probability from a two-way table

8L2's TV watching preferences

	soaps	sport	films	series
boys	0	12	1	4
girls	5	0	0	7

If I picked someone at random what is the probability they prefer...

$p(\text{soap}) = \frac{5}{29}$

$p(\text{girl likes a series}) = \frac{7}{12}$

$p(\text{boy doesn't like sport}) = \frac{5}{17}$

$< \frac{1}{2}$ $> \frac{1}{2}$ $\frac{4}{7}$

$\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{3}{4}$ $1\frac{123}{124}$

$\frac{2}{5}$ $\frac{2}{9}$ $\frac{4}{9}$ $\frac{5}{9}$ $\frac{6}{9}$

$\frac{3}{9}$

Attachments

fair or unfair.ppt.ppt

Fair or unfair.pptx