Nelson Maths 9 for the CSF II
Homework and Assessment Sheets

Predicting probabilities | CD 9-6

Name: _____ Class: _____
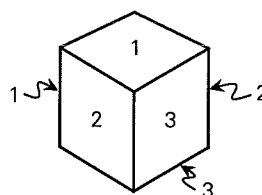
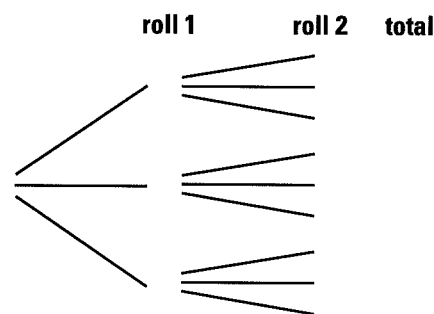Due date: _____ Parent's signature: _____

Level 5	/10	Level 6	/20

Part A: Level 5

When this die is rolled there are three possible outcomes.

1 What are the outcomes? {_____, _____, _____}

2 to **5** Draw a tree diagram for rolling the die twice. Show the outcomes from the first die roll(1 mark), the outcomes from the second die roll(1 mark) and the totals (2 marks).

roll 1   roll 2   total

What are the following theoretical probabilities.
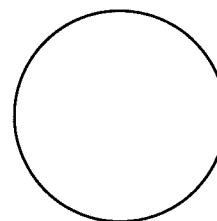
6 Pr(3 on roll 1)   _____

7 Pr(3 on roll 1 and 1 on roll 2) _____

8 Pr(total of 4)   _____

9 Pr(total of 6)   _____

10 Draw a spinner that could be used instead of the die.

Part B: Level 6

The total of the numbers showing on two dice can be displayed using a lattice diagram.

1 Complete the lattice diagram.

Use the lattice diagram to answer these questions.

2 Pr(total of 12)   _____

3 Pr(total of 7)   _____

4 Pr(total of 3)   _____

5 Pr(total at least 7) _____

6 If I rolled two dice 100 times, how often would I expect to roll a total of 12? _____

6				10		
5						
4			7			
3					8	
2						
1						7
	1	2	3	4	5	6

In my pencil case I have a red biro, three blue biros, four grey leads and six coloured pencils. If I choose one at random, what is the likelihood of:

7 Pr(blue biro) _____

8 Pr(coloured pencil) _____

If I choose one and identify it as my red biro, replace it and choose again, on the second choice what is the likelihood of:

9 Pr(blue biro) _____

10 Pr(coloured pencil) _____

If this time I choose a blue biro and don't replace it, and then select another from my pencil case, what is:

11 Pr(blue biro) _____

12 Pr(red biro) _____

13 If I choose twice with replacement, what is the probability of choosing the red twice? _____

If a letter is chosen at random from the word SASKATCHEWAN, what is the probability that it is:

14 the letter T? _____

15 the letter A? _____

16 not a vowel? _____

The free-throw statistics for the school basketball team are presented in the table.

17 Which player is most successful?

_____

18 What is the experimental probability that she will successfully shoot a free throw? _____

19 How many points would you expect her to shoot if she were given three free throws?

_____

20 What is the probability that Tanya will miss a free throw? _____

Player	Points scored/ attempts
Caroline	73/98
Rachael	14/21
Kiersten	71/92
Kara	9/16
Christina	44/74
Erin	8/14
Krystle	1/2
Tanya	10/18
Yvonne	6/9
Liz	9/11
Mindy	4/9

Puzzler

In a family consisting of six children, all children could be of the same sex, but this would be unlikely. You could have five of one sex and one of the other, but this would also seem to be not very likely.

What would be the most likely family? (Don't guess — work it out!)

Vocabulary

Write the mathematical meaning of:

Prediction _____

Trial _____

Nelson Maths 9 for the CSF II
Homework and Assessment Sheets

Displaying outcomes

Name: _____ Class: _____

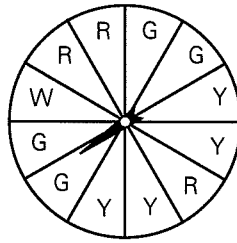Due date: _____ Parent's signature: _____

Level 5	/10	Level 6																		/20

Part A: Level 5

For each of these sentences, write a probability as a decimal between 0 and 1.

1 You will be given some homework this week. _____

2 There will be an electric power cut this week. _____

3 It will rain before tomorrow. _____

For the spinner shown on the right, estimate (as a fraction):

4 Pr(R) _____

5 Pr(Y) _____

Put numbers on the six faces of this die so that:

6 $Pr(3) = \frac{1}{6}$

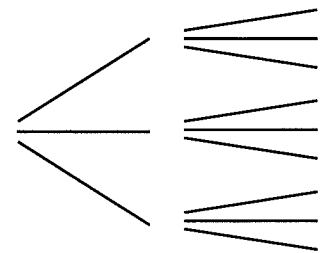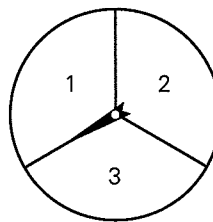**7** $Pr(2) = \frac{1}{2}$

8 $Pr(1) = \frac{1}{3}$
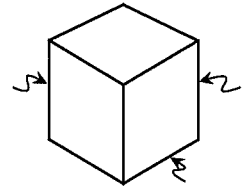
A box contains 12 red, five blue and three orange marbles. I close my eyes and choose one marble. What is the probability of choosing:

9 red or blue _____

10 not orange _____

Part B: Level 6

When this spinner is spun twice there are nine possible outcomes.
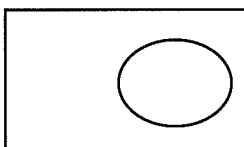
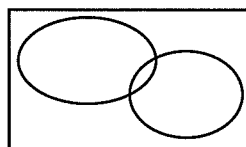**1** Draw a tree diagram for them.

What is the probability of:

2 two 1s? _____

3 a 1 and a 2 in that order? _____

4 a 1 and a 2 in any order? _____

5 no 2s? _____

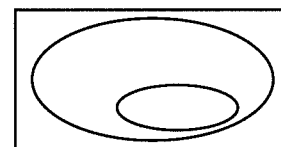For each of the following, organise the information into the Venn diagram.

6 *students*
    boys, girls

7 *movies*
    adventure, comedy

8 *sports*
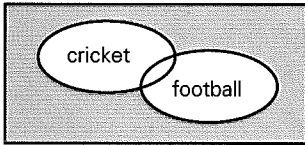   sports played with sticks, lacrosse

79

Draw a simple Venn diagram that could represent:

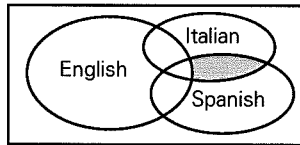**9** *sportspeople*
basketballers, athletes, swimmers

10 *food*
vegetables, carrots, bananas
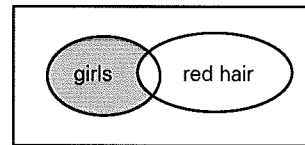
Describe the shaded area in each of the Venn diagrams.

11 *sport*

12 *languages spoken*

13 *people*

Class 9B has 25 students, 10 girls and 15 boys. Twelve boys are wearing school socks, the girls are wearing school tights and the rest have the wrong socks on.

14 Draw a Venn diagram of this.

15 How many boys have the wrong socks on? _____

16 What is the probability that if a student from 9B is chosen at random, they will be wearing tights? _____

A study of Year 9 students is summarised in this two-way table.

17 How many students were studied? _____

	Red hair	Not red hair
Freckles	12	18
No freckles	4	16

Work out the following.

18 Pr(red hair and no freckles) _____

19 Pr(no red hair and no freckles) _____

20 Pr(freckles if red hair) _____

Puzzler

In a game of chance, a die is rolled, and if the contestant's chosen number is showing on the die, the contestant wins. The probability of winning is $\frac{1}{6}$.

The game is changed so that three dice are rolled and if any of the three shows the number, the contestant wins. The probability of winning is now $\frac{1}{2}$, or is it?

Vocabulary

Write the mathematical meaning of:

Set _____

Element _____