

## N5 Lifeskills Unit 1 Revision

1. The table below shows the results of a survey of First Year pupils.

	<i>Wearing a blazer</i>	<i>Not wearing a blazer</i>
<i>Boys</i>	40	22
<i>Girls</i>	29	9

What is the probability that a pupil, chosen at random from this sample, will be a girl wearing a blazer?

- 2.
- (a) Show that the standard deviation of 1, 1, 1, 2 and 5 is equal to  $\sqrt{3}$ .
- (b) **Write down** the standard deviation of 101, 101, 101, 102 and 105.

3. The stem and leaf diagram shows the number of points gained by the football teams in the Premiership League in a season.

3	3 3 3 9
4	1 4 5 5 7 8
5	0 2 3 3 6 6
6	0
7	5 9
8	
9	0

$n = 20$

4 | 1 represents 41 points

- (a) Arsenal finished 1st in the Premiership with 90 points.  
In what position did Southampton finish if they gained 47 points?
- (b) What is the probability that a team chosen at random scored less than 44 points?

4.

(a) The marks of a group of students in their October test are listed below.

41 56 68 59 43 37 70 58 61 47 75 66

Calculate:

- (i) the median;
- (ii) the semi-interquartile range.

(b) The teacher arranges extra homework classes for the students before the next test in December.

In this test, the median is 67 and the semi-interquartile range is 7.

Make **two** appropriate comments comparing the marks in the October and December tests.

5.

Harry often plays golf and the scores for some of his games are recorded below.

84 78 87 80 81

(a) For this sample calculate:

- (i) the mean;
- (ii) the standard deviation.

**Show clearly all your working.**



(b) His partner for these games is Tony, whose scores are listed below.

104 98 107 100 101

**Write down** the mean and standard deviation of Tony's scores.

6.

Ian's annual salary is £28 400. His boss tells him that his salary will increase by 2.3% per annum.

What will Ian's annual salary be after 3 years?

Give your answer to the nearest pound.

7.

The table below shows the monthly repayments to be made when money is borrowed from the Bank of Caledonia.

Repayments can be made with or without loan protection.

Monthly repayments: Bank of Caledonia						
	24 months		36 months		48 months	
Loan Amount	With Loan Protection	Without Loan Protection	With Loan Protection	Without Loan Protection	With Loan Protection	Without Loan Protection
£10 000	£495	£445	£343	£305	£277	£237
£8000	£395	£356	£275	£244	£222	£190
£5000	£247	£223	£172	£153	£139	£119
£4000	£198	£179	£138	£123	£111	£95

Jeremy borrows £8000 over 36 months **without** loan protection.

After 28 months, he is made redundant and is unable to pay the remainder of the loan.

His brother, Peter, agrees to make the remaining payments.

How much does Peter pay in total?

8.

Tasnim rolls a standard dice with faces numbered 1 to 6.

The probability that she gets a number less than 7 is

A 0

B  $\frac{1}{7}$

C  $\frac{1}{6}$

D 1.

Write down the letter that corresponds to the correct probability.

9.

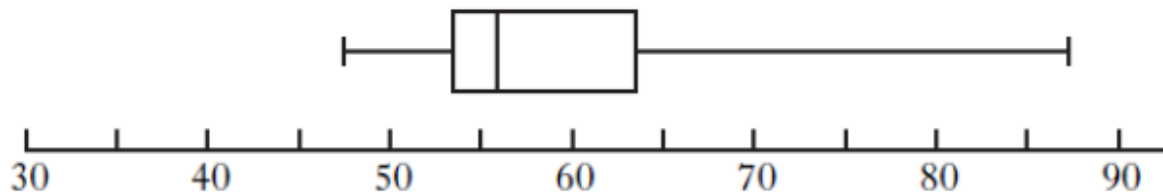
This back-to-back stem and leaf diagram shows the results for a class in a recent mathematics examination.

Girls						Boys							
				1	3								
				9	4	7	9						
8	7	4	3	2	5	2	3	4	4	6	6	7	9
				9	4	6	3						
				9	6	3	7	4	8				
				8	1	8	7						

n = 15                  n = 14

Key			
3		7	represents 73%
		8	represents 87%

(a) A boxplot is drawn to represent one set of data.



Does the boxplot above represent the girls' data or the boys' data?

**Give a reason for your answer.**

(b) For the **other** set of data, find:

- (i) the median;
- (ii) the lower quartile;
- (iii) the upper quartile.

(c) Use the answers found in part (b) to construct a second boxplot.

(d) Make an appropriate comment about the distribution of data in the two sets.

10.

A job as a sales consultant is advertised.



Matthew telephones for information and finds out that the basic wage is £15 000. In addition to this he will receive 2.5% commission on all his sales.

What value of sales will Matthew have to make in order to earn £22 000 per year?

11.

Luljeta Dumani sells carpets. Her gross annual salary for the last year was £15 425.

The table below shows the rates of tax applicable for last year.

<b>Taxable Income</b>	<b>Rate</b>
On the first £2230	10%
On the next £32 370	22%
On any income over £34 600	40%

Luljeta's total tax allowance is £5225.

Calculate her annual tax bill for last year.

12.

The table below shows the monthly repayments to be made, with and without payment protection, when money is borrowed from the Good Deal Loan Company.

loan amount	60 months		48 months		36 months		24 months	
	W	WO	W	WO	W	WO	W	WO
£15 000	342.63	288.49	409.43	350.79	510.76	454.86	736.73	663.35
£12 500	285.53	240.41	341.20	292.33	425.63	379.05	613.94	552.79
£10 000	228.42	192.33	272.95	233.86	340.50	303.24	491.15	442.23
£7500	171.31	144.24	204.72	175.40	255.38	227.43	368.37	331.68
£5000	114.21	96.16	136.48	116.93	170.25	151.62	245.58	221.12
W = with payment protection      WO = without payment protection								

(a) Joseph decides to borrow £12 500.

If he repays it over 48 months, **without** payment protection, calculate the cost of the loan.

(b) Brian thinks it would be cheaper to take a loan of £12 500 over 36 months **with** payment protection.

Is he correct?

Explain your answer.

13.

Calculate the **compound interest** earned when £50 000 is invested for 4 years at 4.5% per annum.

Give your answer to the nearest penny.

14.

Irene works in the local chemist's shop.

One week she works 40 hours at her basic rate of pay and 3 hours overtime at double time.

Her gross pay for that week was £239.20.

Calculate Irene's basic hourly rate of pay.

15.

Sandi takes the bus to work each day.

Over a two week period, she records the number of minutes the bus is late each day. The results are shown below.

5    6    15    0    6    11    2    9    8    7

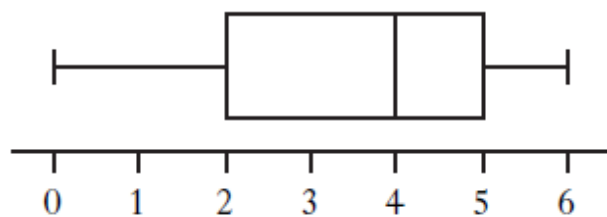
(a) From the above data, find:

- (i) the median;
- (ii) the lower quartile;
- (iii) the upper quartile.

(b) Construct a boxplot for the data.

Sandi decides to take the train over the next two week period and records the number of minutes the train is late each day.

The boxplot, drawn below, was constructed for the new data.



(c) Compare the two boxplots and comment.

16.

A company buys machinery worth £750 000.

The value of the machinery depreciates by 20% per annum.

The machinery will be replaced at the end of the year in which its value falls below half of its original value.

After how many years should the machinery be replaced?

**You must explain your answer.**

17.

Below is a copy of part of David Leblanc's credit card statement.

***Southern Star Credit***

Name: David Leblanc

12 May, 2008

Card Number: 4517 6767 2368 9001

Credit Limit £3600

12 April 2008	Balance brought forward	£125.00
2 May 2008	Payment received	<u>-50.00</u>
	Balance	<b>A</b>
	Interest at 1.6%	<b>B</b>
5 May 2008	Bon Cave Wines	62.99
5 May 2008	Jacques Delicatessen	15.88
	Balance owed	<b>C</b>

Minimum payment: 3% of Balance owed or £5, whichever is greater.

Geetha pays the minimum payment.

She does not use the credit card again.

What is the "Balance owed" in her next statement?

18.

A new book "Intermediate 2 Maths is Fun" was published in 2006.

There were 3000 sales of the book during that year.

Sales rose by 11% in 2007 then fell by 10% in 2008.

Were the sales in 2008 more or less than the sales in 2006?

**You must give a reason for your answer.**



19.

One weekend, the attendances at five Premier League football matches were recorded.

8 900            12 700            59 200            10 300            9 700

The median attendance is 10 300.

- (a) Calculate the mean attendance.
- (b) Which of the two “averages” – the mean or the median – is more representative of the data?

You must explain your answer.

20.

The National Debt of the United Kingdom was recently calculated as

£1 157 818 887 139.

Round this amount to four significant figures.

21.

A copy of Logan Pollock’s payslip is shown below for one week in February.

<b>Name</b> L. Pollock	<b>Employee No.</b> 027	<b>Tax Code</b> 64L	<b>Week Ending</b> 14/02/2012
<b>Basic Pay</b> £296.00	<b>Overtime Pay</b> £55.50	<b>Bonus</b> —	<b>Gross Pay</b> £351.50
<b>National Insurance</b> £20.04	<b>Income Tax</b> £45.40	<b>Pension</b> £21.09	<b>Deductions</b> £86.53
			<b>Net Pay</b> £264.97

Logan worked 40 hours for his basic pay.

If overtime was paid at the rate of “time and a half”, calculate how many hours of overtime he worked during that week.