

Unit Title: Lifeskills Mathematics Nat 5

Unit Code: H225 75

Remember to show all of your working and use units where appropriate.

Pre-assessment

All Departments

Student Name: _____ **Course/Class** _____

I understand the conditions of this pre-assessment and the policy on plagiarism.
In signing, I declare that the evidence presented throughout the unit is my own work,
acknowledging all sources of reference and providing citation as appropriate.

Student Signature: _____ **Date:** _____

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Conditions of Pre-Assessment

Classroom (Open Book)	☐	Practical	☐
Classroom (Closed Book)	☒	Written	☒
Home-Based (Open Book)	☐	On-line	☐
Other	☐	Supervised	☒
Duration of Pre-Assessment:		Approx. 1.5 hours	
Resources Required:		Calculator permitted	

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Question 1

Linda bought an antique vase for Euros 24,780

It appreciated in value by 2.3% for each of the next four years.

How much is Linda's antique vase now worth?

Give your answer to two significant figures.

ANSWER:

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Question 2

A cleaning fluid manufacturer sells its product in 900 ml bottles.
Each empty bottle weighs 80 grams.

To transport the full bottles, they are packaged in trays of 380 bottles.

A local cleaning company orders 14 trays of the cleaning fluid. The manufacturer has a delivery vehicle that can accommodate a maximum load of 7.5 tonnes.

1 litre of cleaning fluid weighs 1 kilogram.

Can the order be delivered in one van load?
Use your calculations to justify your answer.

ANSWER:

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Question 3

Bhoomi enjoyed a holiday with her parents in Mumbai, India.

She had 920 Indian Rupees for spending money.

Having spent an average of 78 Indian Rupees on each of the 8 days she was in Mumbai.

Upon returning home to Bordeaux in France, she changed her Indian Rupees to Euros.

Euros 1 = 89.25 Indian Rupees

How much, in Euros, will Bhoomi get for her remaining Indian Rupees?

Give your answer in currency to 2 decimal places.

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Question 4a

Shigeko leaves her hotel in Takahama, Japan at 15:32 local time and arrives at home in Scotland at 10.13 pm

The time in Japan is 8 hours ahead of time in Scotland.

How long did the journey take door to door?

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Question 4b:

Abeba and family decide to book luxury cinema season tickets for a new cinema. There are three types of seating available: Comfort, Comfort Plus and Snooze Super.

Prices are shown within the table below.

Comfort		Comfort Plus		Snooze Super
Daily Use	Anytime	Daily Use	Anytime	Anytime
Euros 172.98	Euros 182.95	Euros 192.98	Euros 215.02	Euros 278

Children up to 16 pay 80% of the full price.

Additional Luxuries (additional cost for all types of season tickets)	
Unlimited cold drinks	Euros 33.59
Unlimited hot dogs	Euros 93.12

Adults over 18 pay 75% more for Additional Luxuries.

A £3.50 fee will be added to all credit card transactions.

Abebe and her husband, plus their three children aged 5, 13, and 17, wish to book.

- Deciding upon the Comfort Plus Anytime season tickets
- All within the group with all additional luxuries
- Payment made by credit card
- Budget of Euros 1,500

Have they budgeted enough to cover all costs?

ANSWER:

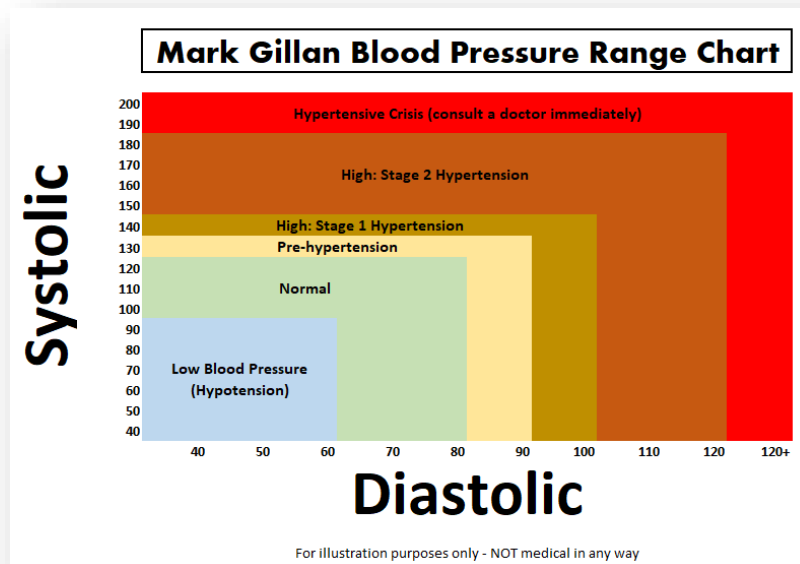
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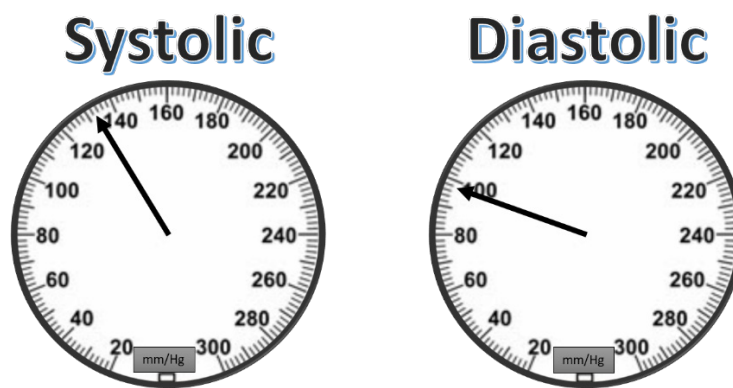
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Question 5:

Mark's blood pressure chart shows the ranges of blood pressure zones.



Li-Hua has had her blood pressure taken using a sphygmomanometer. The results are shown on the dials below.



Explain what this tells Li-Hua about her blood pressure.

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Question 6:

A local community college library has nonfiction books occupy $\frac{1}{5}$ of the library shelves and $\frac{2}{9}$ occupied by general study. The balance of the books is leisure science fiction.

What fraction of the books is leisure science fiction?

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Question 7

Comedy act Lollie & Haddie performed at the Megadome Arena. There were three levels of seats available.

Stage Centre (A) being the most expensive and best seats, Stage Side (B) middle priced, and Cloud High (C) being the cheapest.

The cheapest seats at the concert were Euros 22.50

The ratio of ticket prices was:

$$A:B:C = 5:3:1$$

Part One of question:

What is the price of each type of seat?

ANSWER:

Part Two of question:

It was a sell-out crowd of 7,000 tickets.

The ratio of the number of each type of seat was:

$$A:B:C = 3:4:8$$

Calculate the total amount taken in ticket sales to the nearest whole number.

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Question 8

A large supplier of antique vinyl records orders specialist vinyl records in boxes of 8

The probability of scratched or broken old records is 0.017

In a delivery of 800 boxes, 13 boxes contain at least one broken or scratched vinyl

Is this more or less than expected?

Use your workings to explain your answer.

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Question 9

A group of 15 volunteers were asked to read pages of a 50-page book in 3 hours as part of a fun experiment.

A note is made as to the number of pages read in the time provided, whilst distractions are made.

Each volunteer is then hypnotised after reading that book. The hypnosis makes suggestions as to reading faster and concentration methods to ignore the distractions.

The volunteers are asked to read another book, again containing 50 pages and under the same circumstances. A note is made as to the number of pages read this time round.

The results are shown below.

Before Hypnosis										After Hypnosis									
5	4	4	3	2	2	1	3												
	7	5	1			2	2	8											
	8	7	5	4		3	1	5	5										
					1	4	2	3	3	4	9								
					1	5	4	5	7	8									
n=15										n=15									

Key: 4|2 = 42 out of 50 pages

(a) What was the highest number of pages read?

ANSWER:

(b) Calculate the mean number of pages before and after, declaring if the hypnosis might have assisted within the experiment.

ANSWER:

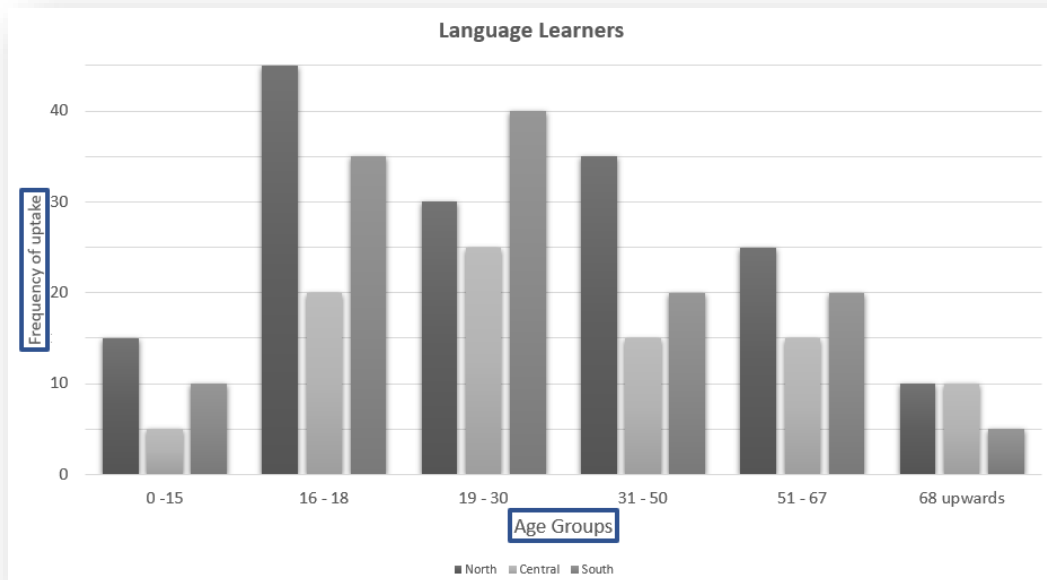
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Question 10

The column chart shows the frequency of uptake of languages for age groups within three regions of North, Central and South.



(a) Which region had the highest frequency of uptake for the 16-18 age group and what was the frequency uptake?

ANSWER:

(b) Generally, across all age groups, which region has the higher frequencies of uptake? Explain your response.

ANSWER:

(c) Generally, across all age groups, which region tends to have the lesser frequencies of uptake? Explain your response.

ANSWER:

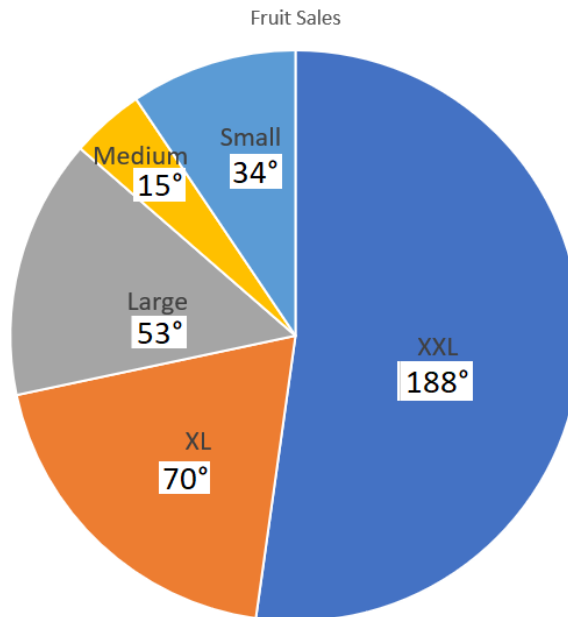
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Question 11

The pie chart shows the production amounts of t-shirt sizes of a small manufacturer for one week.



There was a total of 486 pieces of XL produced that week.

Calculate the number of XXL for the same week.

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Question 12

A supplier of crystal glasses orders fine crystal goblets in boxes of 6

The probability of scratched or broken old records is 0.028

In a delivery of 900 boxes, 28 boxes contain at least one broken crystal goblet

Is this more or less than expected?

Use your workings to explain your answer.

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Question 13

Pia bought a rare coin for Euros 1575

It appreciated in value by 13.5% for each of the next three years.

How much is Pia's rare coin now worth?

Give your answer to two significant figures.

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Question 14

Homer leaves his mother's house in San Francisco, USA at 02:42 local time and arrives at his friend's house in Scotland at 11.09 pm

The time in San Francisco is 8 hours behind the time in Scotland.

How long did the journey take door to door?

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Question 15

A hand sanitiser manufacturer sells its product in 850 ml bottles.
Each empty bottle weighs 50 grams.

To transport the full bottles, they are packaged in trays of 700 bottles.

A local germ control company orders 32 trays of the hand sanitiser.
The manufacturer has a delivery vehicle than can accommodate a maximum load of 23 tonnes.

1 litre of cleaning fluid weighs 1 kilogram.

Can the order be delivered in one van load?
Use your calculations to justify your answer.

ANSWER:

THIS IS THE END OF THE PRE-ASSESSMENT