

Pre-assessment 2

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:** _____

Assessment will show feedback from the lecturer and result.
Lecturer (assessor) will sign and record on register.

Result: _____ **Date:** _____

Unit Title: Numeracy at SCQF Level 5
Unit Code: F3GF 11

Conditions of Pre-Assessment (Assessment will be supervised)

Classroom (Open Book)	☐	Practical	☐
Classroom (Closed Book)	☒	Written	☒
Home-Based (Open Book)	☐	On-line	☐
Other	☐	Supervised	☐
Duration of Pre-Assessment:		Approx. 60 mins	
Resources Required:		Calculator, graph paper, ruler, compasses, protractor	
Pass Mark:		All responses correct	

Unit Title: Numeracy at SCQF Level 5

Unit Code: F3GF 11

QUESTION 1:

Mr Wong has an income of £51,950 and a tax free personal allowance of £12,750 as per a previous year of Scottish Tax Rate Bands in the table below.

How much income tax in total does Mr Wong have to pay for the financial year using the band rates provided below?

Show all workings and your answer to the nearest whole pound.

Bands	Band name	Rate (%)
Zero Rate upto £12,570	Personal Allowance	0
£12,571- £14,876	Starter Rate	19
£14,877 - £26,561	Scottish Basic Rate	20
£26,562 - £43,662	Intermediate Rate	21
£43,663 - £75,000	Higher Rate	42
£75,001 - £125,140	Advanced Rate	45
Above £125,140	Top Rate	48

ANSWER:

Unit Title: Numeracy at SCQF Level 5

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QUESTION 2:

A large testing facility is considering changing gas supply for its burners. It uses 1920 units per month.

Gillan Energy is charging the following per month:

- * 28.34 pence per unit for the first 750 units.
- * 12.6 pence per unit for all units over 750.
- * Standing monthly charge of £52.00
- * VAT of 20 percent should be added to the final cost.

Nicol Fuels & Supplies is charging the following per month:

- * 25.50 pence per unit for the first 1000 units.
- * 9.01 pence per unit for the next 500 units.
- * 3.2 pence per unit thereafter.
- * Standing monthly charge of £49.50
- * VAT of 20 percent should be added to the final cost.

What company is the cheapest and by how much?

ANSWER:

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QUESTION 3:

A group of students completed a **mock test (out of 100 marks)** **BEFORE** and **AFTER** attending a study support session. Their scores are shown in the two **stem-and-leaf diagrams** below.

Before Revision Session		After Revision Session	
Stem (Tens)	Leaf (Units)	Stem (Tens)	Leaf (Units)
4	2 5	5	3
5	0 3 6 9	6	1 4 5 8 9
6	1 2 5 7 8	7	0 2 4 6 8
7	0 2	8	1 2
8	-	9	0

Questions:

- (a) How many students took the test before and after the revision session?
- (b) What was the **highest** and **lowest** score in each test?
- (c) Compare the **spread** of the data before and after. Which set has a **wider range**?
- (d) Has performance generally improved after the revision session?
Justify your answer using the data.

ANSWER:

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QUESTION 4:

Ewa has been admitted to hospital and you are required to calculate Ewa's BMI using the formula:

$$\text{BMI} = \frac{W}{H^2}$$

W is weight in Kilograms and H is height in metres.

Ewa weight 6 ½ stone and height is 4 ft 3 in.

(1 stone = 6.35 Kg, 1 inch = 2.54 cm, 1 foot = 12 inches)

a) What is Ewa's BMI correct to three significant figures?

ANSWER:

b) Using the categories below, determine which category Ewa falls into.

BMI Range:	Category:
Under 18	Underweight
Between 18 and 25.5	Healthy Weight
Between 25.5 and 33	Overweight
Between 33 and 44	Obese
Over 44	Extremely Obese

ANSWER:

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QUESTION 5:

The table below shows quantities of chemicals for three different products created by the name of laboratory head pharmacist.

Using an appropriate chart type, represent the information graphically to show the contribution of each chemical to the laboratory formula total.

	Bottles of Chemicals for each laboratory name.			
Laboratory	Acetone	Benzyl Chloride	Hydrochloric Acid	Diethyl Ether
Northern Labs	55	54	35	44
West Coast	67	44	27	37
Eastern Labs	55	52	42	40
Southern Pharma	62	30	31	62

ANSWER:

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QUESTION 6:

Head Pharmacist, Ms Patel has an income of £73,154 and a tax free personal allowance of £12,750 as per a previous year Scottish Tax Rate Bands in the table below.

How much income tax in total does Ms Patel have to pay for the financial year using the band rates provided below?

Show all workings and your answer to the nearest whole pound.

Bands	Band name	Rate (%)
Zero Rate upto £12,570	Personal Allowance	0
£12,571- £14,876	Starter Rate	19
£14,877 - £26,561	Scottish Basic Rate	20
£26,562 - £43,662	Intermediate Rate	21
£43,663 - £75,000	Higher Rate	42
£75,001 - £125,140	Advanced Rate	45
Above £125,140	Top Rate	48

ANSWER:

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QUESTION 7:

When purchasing utensils, you need to consider paying cash from one supplier or using credit facilities from another supplier.

You require to purchase 45 test tube kits of identical quality.

Gillan Pharma Supplies Company offers test tube kits at £547.99 each, plus 20% VAT. Cash discount of £50 off is available.

Nicol Dee Chem Plant offers the same test tube kits at Euros 723.55 each with no VAT payable and provides 10 months credit at 5% per annum calculated across the whole of the term of credit with the 10 month rate to 2 decimal places. You also benefit from keeping cash in the bank during this term, to the value of £100 as a gift from your bank.

Exchange rate equates to £1 being equivalent to 1.23 Euros.
Sterling should be used for all calculations.

a) Which supplier is cheaper?

b) How much do you save? Express this saving as a percentage rounded off to the nearest whole number percentage.

ANSWER:

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QUESTION 8:

Display the table below in a chart to show how each cost relates to the overall budget.

	Team A cost:	Teams B cost:	Team C cost:
Wages	50	50	150
Transport	100	75	50
Chemicals	25	25	50

ANSWER:

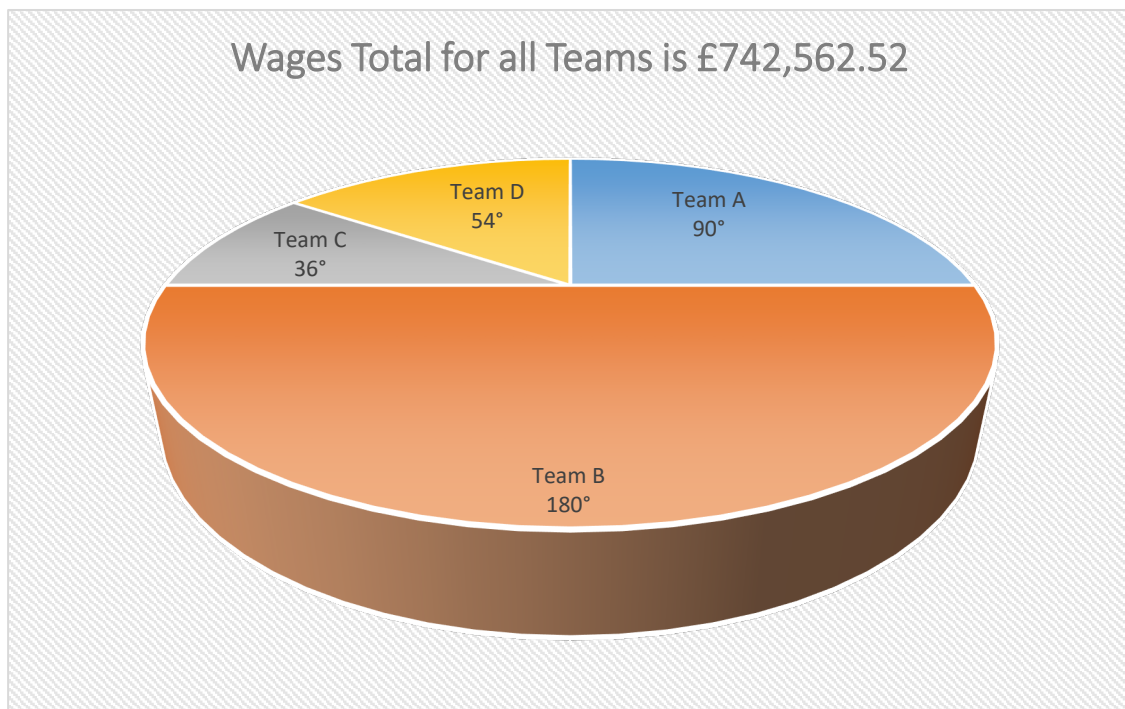
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QUESTION 9:

Observing from the pie chart below, work out the wage bill for each team within Gillan Pharma Company, noting the total wage bill.

Place all the data into a table, listing all teams and the value associated with each team.



ANSWER:

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QUESTION 10:

You receive an electricity charge and need to calculate the cost of electricity as follows:

Electricity Standing Charge is £38.45

Your current electricity reading is 12809

Your previous electricity reading was 11714

Unit charge is 8.3p for each unit used.

Tax is then levied on top of the above calculation at a rate of 20%

What is the total Electricity bill? Please show all your calculations, rounding off to 2 d.p. currency.

ANSWER:

End of Pre-Assessment