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JENN
Training and Consultancy
The path to enlightened education

SUBJECT: MATHEMATICAL LITERACY

GRADE 12

2023 SPRING CLASSSES

SOLUTIONS

Paper 2 Topics

1. Plans
2. Assembly Diagrams
3. Models

MATHEMATICAL LITERACY PROGRAMME FOR 2023 Spring CLASSES

TOPICS FOR PAPER 2			
Plans, Instructions and Assembly diagrams and Models	Plans (1 hour)	± 48	± 45%
	Instructions and Assembly diagrams (1 hour)	± 14	± 13%
	Models (2 hours)	± 45	± 42%
TOTAL		± 110	**100%**
Pre-test and Post-test to be administered since it's a revision of Term 3.			

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ICON DESCRIPTION
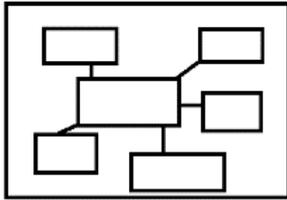
MIND MAP	**EXAMINATION GUIDELINE**	**CONTENTS**	**ACTIVITIES**
BIBLIOGRAPHY	**TERMINOLOGY**	**WORKED EXAMPLES**	**STEPS**
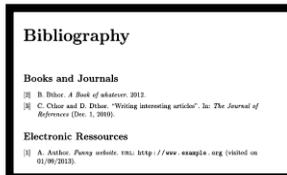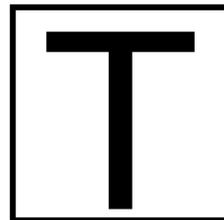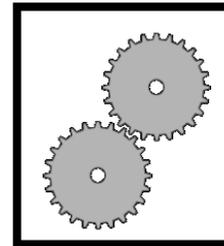
ACTIVITY 1: Floor and Elevation Plans

1.1.1	is a diagram which shows a two-dimensional view of an RDP house from above.
1.1.2	04
1.1.3	Northeast/NE
1.1.4	7,3 m = 7300 mm 133: 7300 1 : 5,48872…
1.1.5	Area of the rectangle = 7,3 m x 7,2 m = 51,83 m^2
1.1.6	To the left
1.2.1	Westerly direction

1.2.2	1 foot = 0,3048 m
	29 feet = 0,3048 × 29
	      = 8,8392 m
	
	1inch = 2,54 cm
	10 inches = 2,54 × 10
	      = 25,4 cm
	      = 0,254 m
	
	29 feet and 10 inches = 8,8392 m + 0,254 m
	                 = 9,0932 m

1.2.3	1 foot = 0,3048 m
	50 feet = 0,3048 × 50
	      = 15,24 m
	      = 15 240 mm
	
	Scale 135 : 15 240
	         1 : 112,888

1.2.4	Elevation B There should be two windows

ACTIVITY 2: Floor and Elevation Plans

1.1.1	It is a plan with a view of a building seen from one side. OR It is a two-dimensional representation of one side of a building
1.1.2	3 cm
1.1.3	Area or Surface Area
1.1.4	0 or None
1.2.1	2 windows
1.2.2	Length of outer wall 7,2 m – 4 m = 3,2 m
1.2.3	Basin
1.2.4	Replace the window with a door to make it accessible from the workshop.
1.2.5	Breadth = 4 – (0,23 × 2) = 3,54 Perimeter = 2 × 4,77 + 2 × 3,54 = 9,54 + 7,08 = 16,62 m

ACTIVITY 3: Assembly Diagrams

1.1.1	32 − (8 + 6 +8 + 8) = 2 bolts
1.1.2	2 nuts
1.1.3	Short brace
1.2.1	4 screws
1.2.2	Drill/Wrench
1.2.3	2 or Step 2
1.2.4	Cylinder/Cylindrical

ACTIVITY 4: Packaging

1.1.1	Bottle diameter = 52 × 2 ÷ 1000
	 Length = width = 0,104 m
	
	 Bottle height = 327 1000
	         = 0,327 m
	
	 Pallet length = 8 × 0,104
	         = 0, 832
	
	 Pallet width = 8 × 0,104
	         = 0,832
	
	 Pallet height = 0,327
	
	 Lengthwise = 8,1 ÷ 0,832
	         = 9
	
	 Width wise = 2,45 ÷ 0,832
	         = 2
	
	 Height wise = 2,6 ÷ 0,327
	         = 7
	
	 Total number of pallets = 9 x 2 x 7
	                 = 126

1.1.2	1,5 ton ✖ 1000 = 1 500 kg 64 ✖ 2 = 128 litre = 128 kg Number of pallets = 1 500 kg ÷ 126 kg = 11 pallets His statement is INCORRECT.
1.2.1	Calculations using volume
1.2.2	**Length - wise:** The number of TVs that can be packed along the LENGTH. **= length of container ÷ length of TV** **=** 6m ÷ (97cm ÷ 100) = 6,18556701 = 6 TVs
1.3	**OPTION 1:** The length of the small box along the length of the large box **Length - wise:** The number of small boxes that can be packed along the LENGTH **= length of large box ÷ length of small box** **=** 54,8 cm ÷ 10,2 cm **=** 5,37254902 boxes **=** 5 boxes **Width - wise:** The number of small boxes that can be packed along the WIDTH **= width of large box ÷ width of small box** **=** 42,1 cm ÷ (87mm ÷ 10) cm **=** 4,83908046 boxes **=** 4 boxes **Height - wise:** The number of small boxes that can be packed along the HEIGHT **= Height of large box ÷ Height of small box** **=** 33,5 cm ÷ 6,5 cm **=** 5,153846154 boxes **=** 5 boxes **TOTAL BOXES PACKED** **=** Number at length ✖ Number at width ✖ Number at height **=** 5 ✖ 4 ✖ 5 **=** 100 boxes **OPTION 2:** The width of the small box along the length of the large box **Length - wise:** The number of small boxes that can be packed along the LENGTH

	= length of large box ÷ width of small box **=** 54,8 cm ÷ (87mm ÷ 10) cm **=** 6,298850575 boxes **=** 6 boxes **Width - wise:** The number of small boxes that can be packed along the WIDTH **= width of large box ÷ length of small box** **=** 42,1 cm ÷ 10,2 cm **=** 4,12745098 boxes **=** 4 boxes **Height - wise:** The number of small boxes that can be packed along the HEIGHT **= Height of large box ÷ Height of small box** **=** 33,5 cm ÷ 6,5 cm **=** 5,153846154 boxes **=** 5 boxes **TOTAL BOXES PACKED** **=** Number at length × Number at width × Number at height **=** 6 × 4 × 5 **=** 120 boxes Conclusion Option 2, more boxes can be packed, and it will be more compact.

1.4	length **=** 3,5cm ×6
	       = 21cm
	
	Width = 3,5cm ×4
	       = 14cm