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GRADE 11

NOVEMBER 2020

**MATHEMATICAL LITERACY P2
(EXEMPLAR)**

MARKS: 100

TIME: 2 hours

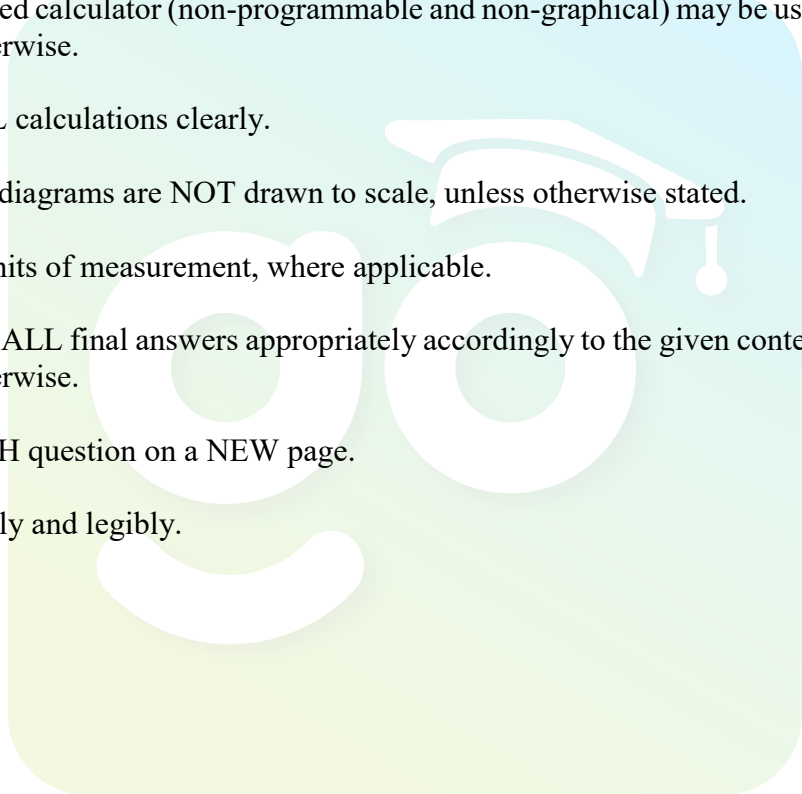


This question paper consists of 8 pages and an addendum with 4 pages.

INSTRUCTIONS AND INFORMATION

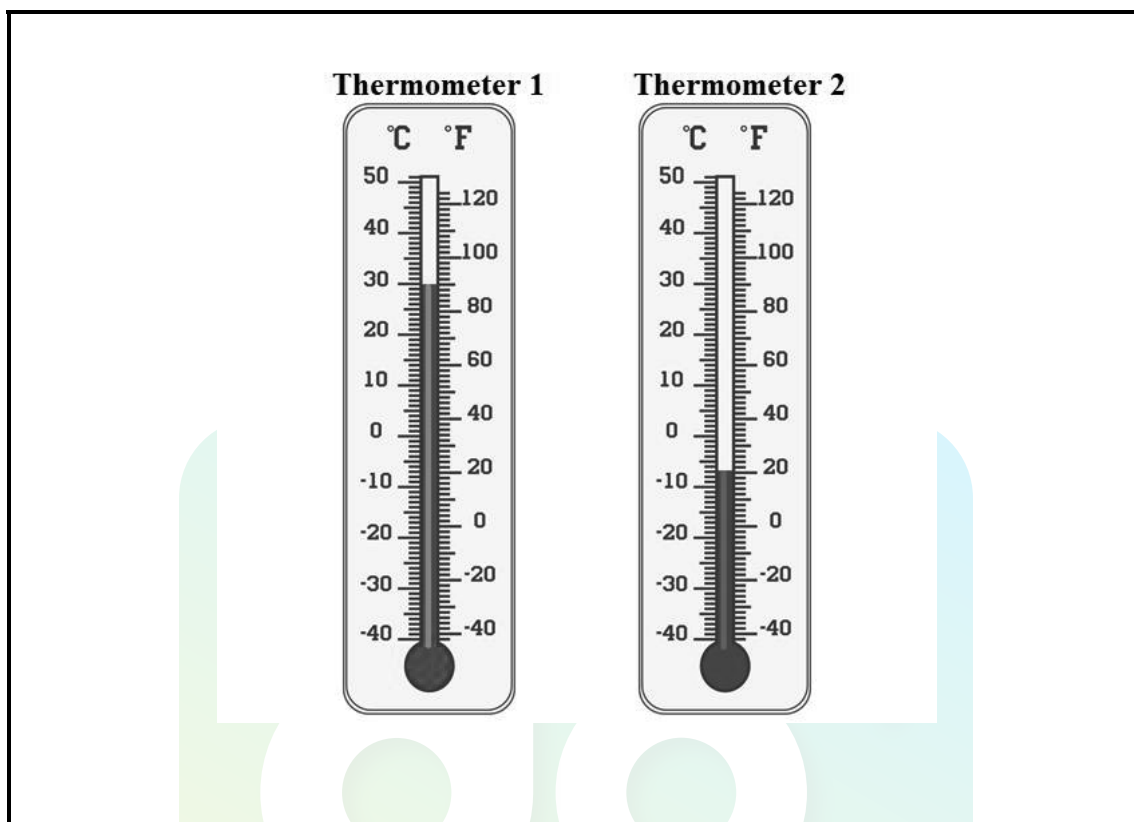
Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ADDENDUM with ANNEXURES for the following questions:
ANNEXURE A for QUESTION 2.2,
ANNEXURE B for QUESTION 3.1,
ANNEXURE C for QUESTION 3.2 and
ANNEXURE D for QUESTION 4.1
3. Number the questions correctly according to the numbering system used in this question paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. Show ALL calculations clearly.
6. Maps and diagrams are NOT drawn to scale, unless otherwise stated.
7. Indicate units of measurement, where applicable.
8. Round off ALL final answers appropriately accordingly to the given context, unless stated otherwise.
9. Start EACH question on a NEW page.
10. Write neatly and legibly.



QUESTION 1

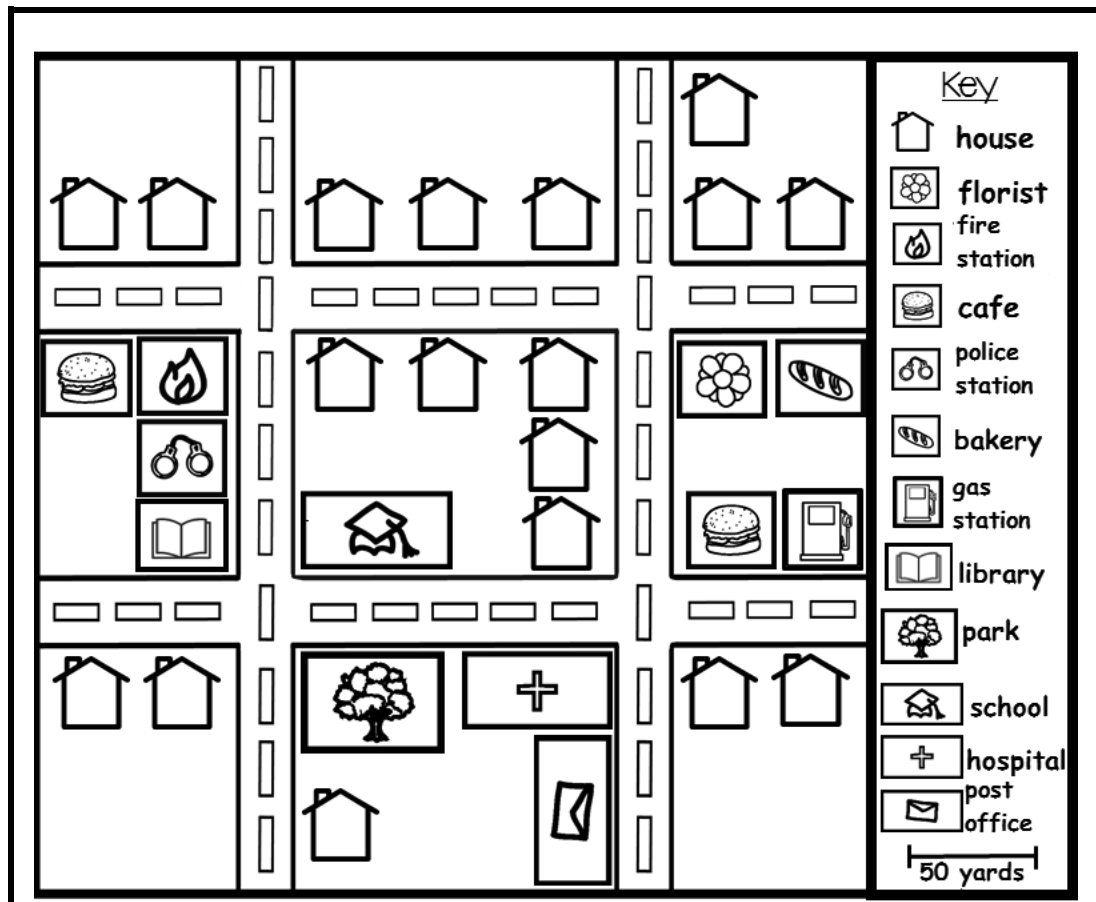
1.1 Study the following thermometers and answer the questions that follow.



[Source: [www.http://:VectorStock.com/22441849](http://www.VectorStock.com/22441849)]

- 1.1.1 Write down the temperature reading in degrees Celsius (°C) of thermometer 1. (2)
- 1.1.2 Identify the temperature in degrees Fahrenheit (°F), if the temperature in degrees Celsius (°C) is 35. (2)
- 1.1.3 Use thermometer 2 and write down the minimum temperature in degrees Fahrenheit (°F) as illustrated on the thermometer. (2)
- 1.1.4 Write the temperature reading in degrees Fahrenheit (°F) of thermometer 1 to thermometer 2 as a ratio in its simplest form. (3)

- 1.2 The following is a street map of a neighbourhood. Study the street map and answer the questions.



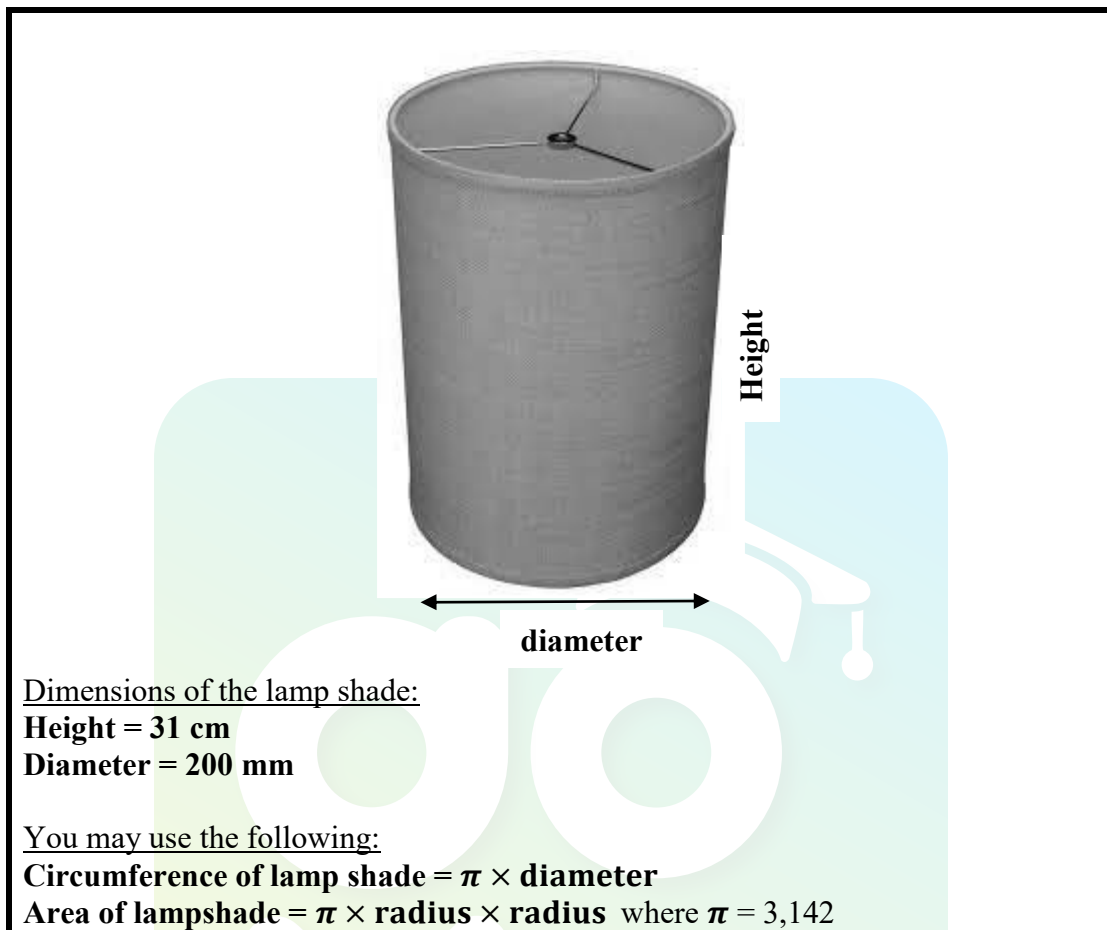
[Source: [www.http//getdrawings.com](http://getdrawings.com)]

- 1.2.1 How many houses are there in this neighbourhood? (2)
- 1.2.2 Which building is located next to the park? (2)
- 1.2.3 Which business appears more than all the other businesses? (2)
- 1.2.4 The bar (graphic or line) scale shows the distance of the bar in real life. Measure the length of the bar in centimetres. (2)
- 1.2.5 Hence, use your measurement in QUESTION 1.2.4 to explain the scale of this street map. (2)
- 1.2.6 How many more houses are in the street at the top than the street at the bottom? (2)

[21]

QUESTION 2

- 2.1 The following diagram shows a cylindrical lamp shade. Use the information to answer the questions that follow.



- 2.1.1 Explain the term *circumference* in this context. (2)
- 2.1.2 Determine the radius of the lamp shade in centimetres. (3)
- 2.1.3 Hence, calculate the circumference of the lamp shade in centimetres. (2)
- 2.1.4 A worker stated that the height of the lamp shade is 65% more than the diameter of the lamp shade.
 Verify, with the necessary calculations, whether the statement is valid or not. (3)
- 2.1.5 The lamp shade needs to be covered with material.
 Calculate the area for the material required if 4,25% wastage must be allowed for seams and overlaps. Give your final answer to the nearest square centimetre. (5)

2.2

ANNEXURE A shows the instructions of how a floor lamp is assembled. Use ANNEXURE A to answer the questions below.

- 2.2.1 How many parts are used to assemble the floor shade excluding the tools (Allen keys and wrench)? (2)
- 2.2.2 Determine the probability of randomly using a set screw to assemble the floor lamp. Write your final answer to 3 decimal places. (3)
- 2.2.3 Give a reason why the manufacturer included an 'IMPORTANT' instruction to the assembly. (2)
- 2.2.4 Explain why the manufacturer did not include a bulb in the packaging. (2)
- 2.2.5 Explain the purpose of the connector. (2)

[26]

QUESTION 3

3.1 Study the map, ANNEXURE B, that shows an extract of Durban. Answer the following questions that refer to the map, ANNEXURE B.

3.1.1 Give the TWO general directions that will be travelled from the Durban City Centre via Berea to Sydenham. (4)

3.1.2 Explain the term *scale*. (2)

3.1.3 Use the linear (graphic) scale on the map and rewrite it as a numeric scale as 1 : ... to the nearest thousand. (4)

3.1.4 The distance from The Bluff to Riverside is 18,2 km when using the M4. At what time will you arrive in Riverside if you leave the Bluff at 14:53 at a speed of 65 km/h?

You may use the following:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} \quad (6)$$

3.1.5 The city of Durban did NOT expand to the east. What is the reason for this? (2)

3.2 Refer to the recipe, ANNEXURE C, and answer the questions below.

You may use the following:

1 pound (lb) = 0,454 kilogram

1 tablespoon = 15 millilitres

1 teaspoon = 5 millilitres

1 cup = 250 millilitres

1 litre = 1 000 millilitres

3.2.1 How many kilograms of steak is used for the Beef Stroganoff? (2)

3.2.2 Determine the total millilitres of salt and black pepper to be used for the recipe. (3)

3.2.3 A new chef stated that the total amount of ingredients for the broth, whipping cream and sour cream is exactly half a litre. Verify, with the necessary calculations, whether his statement is valid or not. (5)

3.2.4 Determine the maximum cooking time for the Beef Stroganoff. (3)

3.2.5 Explain why the time for cooking is NOT the only time that should be considered for making the Beef Stroganoff. (2)

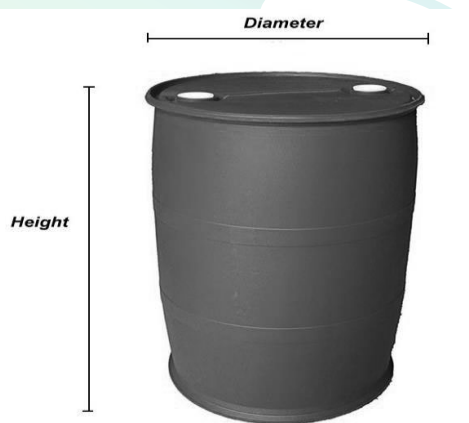
[33]

QUESTION 4

- 4.1 ANNEXURE D shows a seating plan of a cinema. Study the seating plan and answer the questions.

- 4.1.1 Write down the number of seats in Row N. (2)
- 4.1.2 How many more seats are there in the 'Raised Seating Area' than in the 'Flat Seating Area'? (4)
- 4.1.3 Determine the probability that someone will be seated in the 'L' row. (2)
- 4.1.4 You are seated at Seat A17, while your cousin is seated at G7. You need to give your cousin something. Explain how you will walk to reach your cousin if you walk pass the stage/screen area. (3)

- 4.2 The following diagram shows a drum that is advertised as 200 litres. Answer the questions below.



Dimensions of the drum:

Diameter = 580 mm

Height = 93 cm

You may use the following:

Volume of drum = $\pi \times \text{radius} \times \text{radius} \times \text{height}$, where $\pi = 3,142$

$1\,000\text{ cm}^3 = 1\text{ litre}$

- 4.2.1 Show, with the necessary calculations, that the volume of the drum in litres is different than the advertised 200 litres. (5)
- 4.2.2 Hence, explain why the two volumes in litres are different. (4)
- [20]**

TOTAL: 100



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**MATHEMATICAL LITERACY P2
ADDENDUM
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This addendum consists of 5 pages with a 4-page annexure.

ANNEXURE A

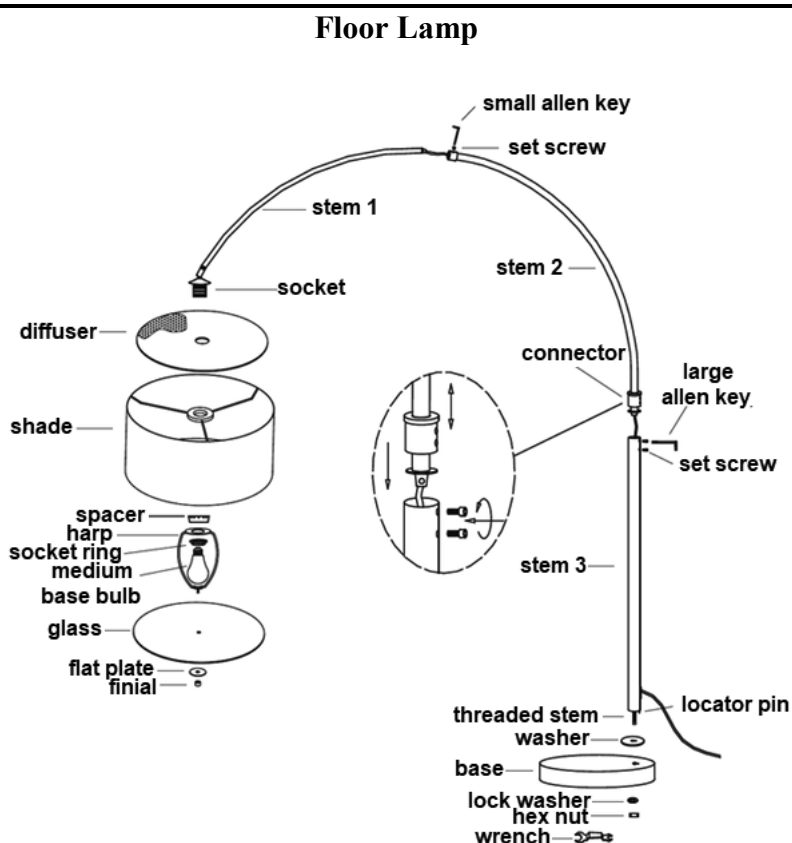
QUESTION 2.2

ASSEMBLE A – FLOOR LAMP

IMPORTANT: Always disconnect the power before installing or replacing a bulb and before cleaning or other maintenance.

Assembly and installation instructions

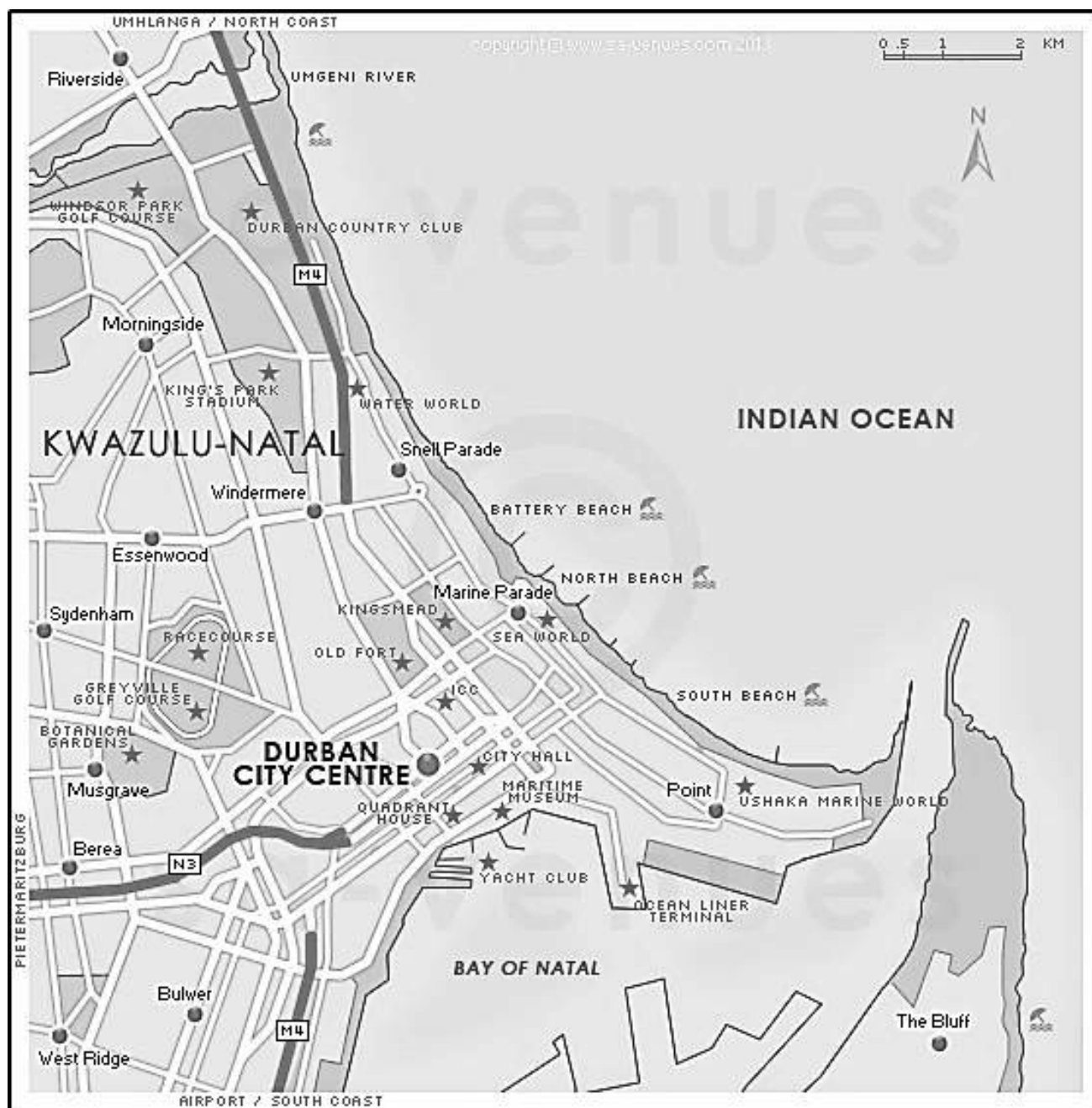
1. Attach the base to stem 3, inserting the threaded stem and locator pin through the washer and in the base. Secure the lock washer and hex nut using the wrench (included).
2. Insert the connector on stem 2 into stem 3 and use the large Allen key to tighten the set screws. (Loosen the set screws to adjust the height of the lamp)
3. Insert stem 1 into stem 2 and use the small Allen key to tighten the set screw.
4. Attach the diffuser, shade, spacer, and harp to the socket, and secure with socket ring.
5. Install a 100-Watt medium base bulb (not included).
6. Attach the glass and flat plate to the harp and secure with the finial.
7. Plug in the cord and the dimmer switch is located on the cord.



[Source: <https://manualzz.com/doc/19886634/assembly-instructions-for-item>]

ANNEXURE B

QUESTION 3.1



ANNEXURE C

QUESTION 3.2

RECIPE FOR BEEF STROGANOFF**For the Beef Stroganoff:**

- 1 lb (pound) top sirloin steak thinly sliced into strips
- 2 (tbsps.) tablespoon olive oil
- 2 (tbsps.) tablespoon butter
- $\frac{1}{2}$ medium onion, finely chopped
- $\frac{1}{2}$ lb (pound) brown mushrooms, thickly sliced
- 1 garlic clove minced
- 1 (tbsp.) tablespoon all-purpose flour
- 1 cup beef broth
- $\frac{3}{4}$ cup heavy whipping cream
- $\frac{1}{4}$ cup sour cream
- 1 (tbsp.) tablespoon Worcestershire sauce
- $\frac{1}{2}$ (tsp.) teaspoon Dijon mustard
- $\frac{1}{2}$ (tsp.) teaspoon salt
- $\frac{1}{4}$ (tsp.) teaspoon black pepper

Instructions

1. Place a large deep pan over medium-high heat. Add 2 tbsps. oil and once the oil is very hot, add thinly sliced beef strips in a single layer, cooking 3 minutes per side without stirring. Cook until just browned and no longer red. Remove beef to a plate and cover to keep warm.
2. Add 2 tbsps. butter, chopped onion and sliced mushrooms. Sauté 6 to 8 minutes or until liquid has evaporated and onions and mushrooms are soft and lightly browned.
3. Add 1 minced garlic clove and sauté 1 minute until fragrant. Add 1 tbsp. flour and sauté another minute stirring constantly.
4. Pour in 1 cup of beef broth, scraping any bits from the bottom of the pan. Then add $\frac{3}{4}$ cup of whipping cream and simmer another 1 to 2 minutes or until slightly thickened.
5. Stir a few tablespoons of the sauce into $\frac{1}{4}$ cup of sour cream to temper it so the sour cream does not curdle. Then add it to the pan while stirring constantly.
6. Stir in 1 tbsp. Worcestershire, $\frac{1}{2}$ tsp Dijon mustard, and season with $\frac{1}{2}$ tsp salt and $\frac{1}{4}$ tsp pepper, or season to taste and continue simmering for 20 minutes until sauce is creamy. Add beef with any accumulated juices back to the pan and bring just to a simmer for 2 minutes until beef is heated through.

ANNEXURE D

QUESTION 4.1

RAISED SEATING AREA	EXIT				SOUND DESK													EXIT						
	1	2	3		5							6	7	8	9	10	11	12	13	N	14	15	16	17
	1	2	3	4	5	6	7	8	9	10	11	12	13	M	14	15	16	17	M	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	L	14	15	16	17	L	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	K	14	15	16	17	K	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	J	14	15	16	17	J	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	H	14	15	16	17	H	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	G	14	15	16	17	G	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	F	14	15	16	17	F	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	E	14	15	16	17	E	14	15	16	17	
FLAT SEATING AREA	< DISABLED ACCESS & FIRE EXIT				FIRE EXIT >													FIRE EXIT >						
	1	2	3	4	5	6	7	8	9	10	11	12	13	D	14	15	16	17	D	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	C	14	15	16	17	C	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	B	14	15	16	17	B	14	15	16	17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	A	14	15	16	17	A	14	15	16	17	

STAGE / SCREEN