

JOURNEY RISK MANAGEMENT REPORT

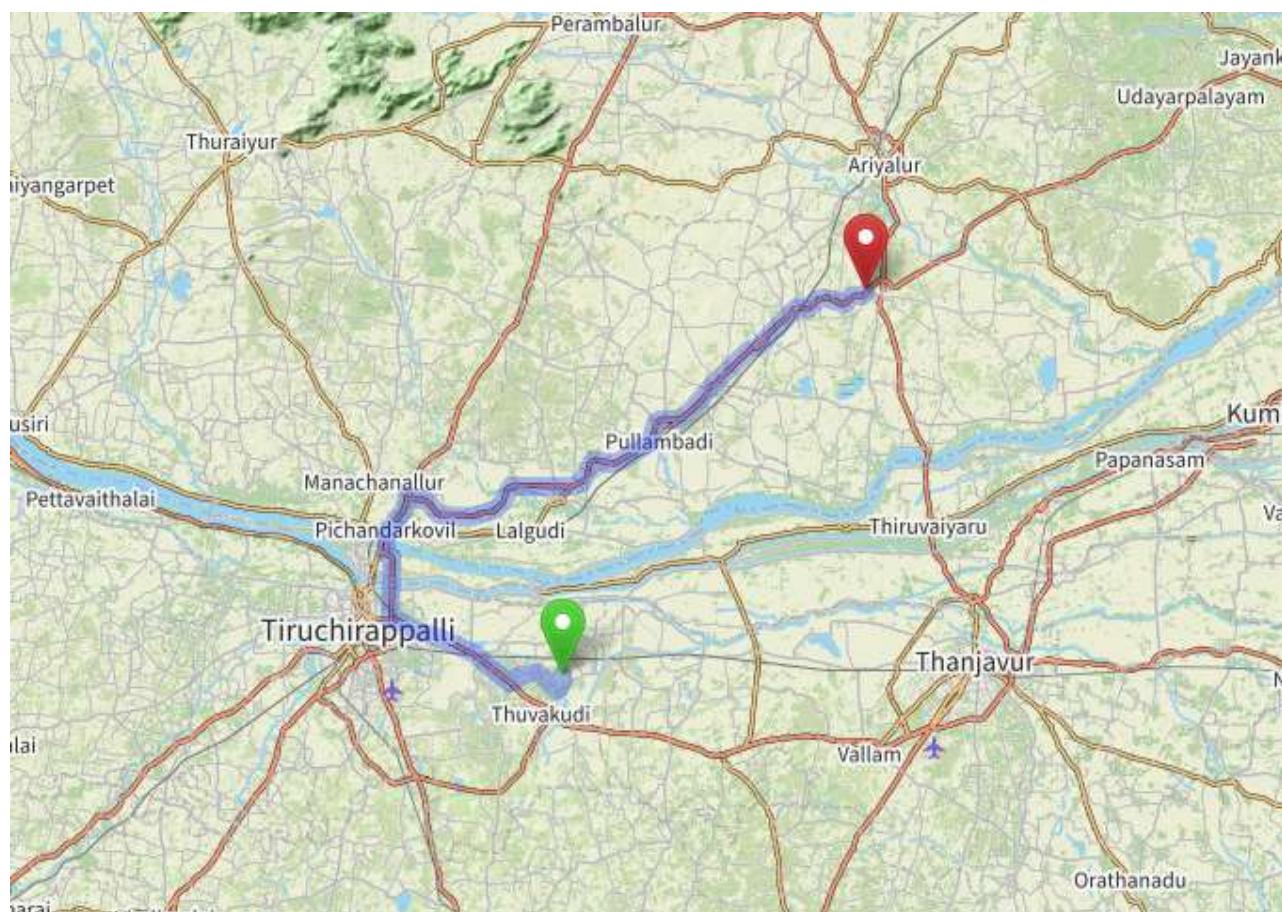


WELCOME TO JOURNEY
RISK MANAGEMENT (JRM)
STUDY USING ARTIFICIAL
INTELLIGENCE (AI)
FOR IOCL TRICHY
TERMINAL

ALARP/JRM/TNSO/BALAJIF

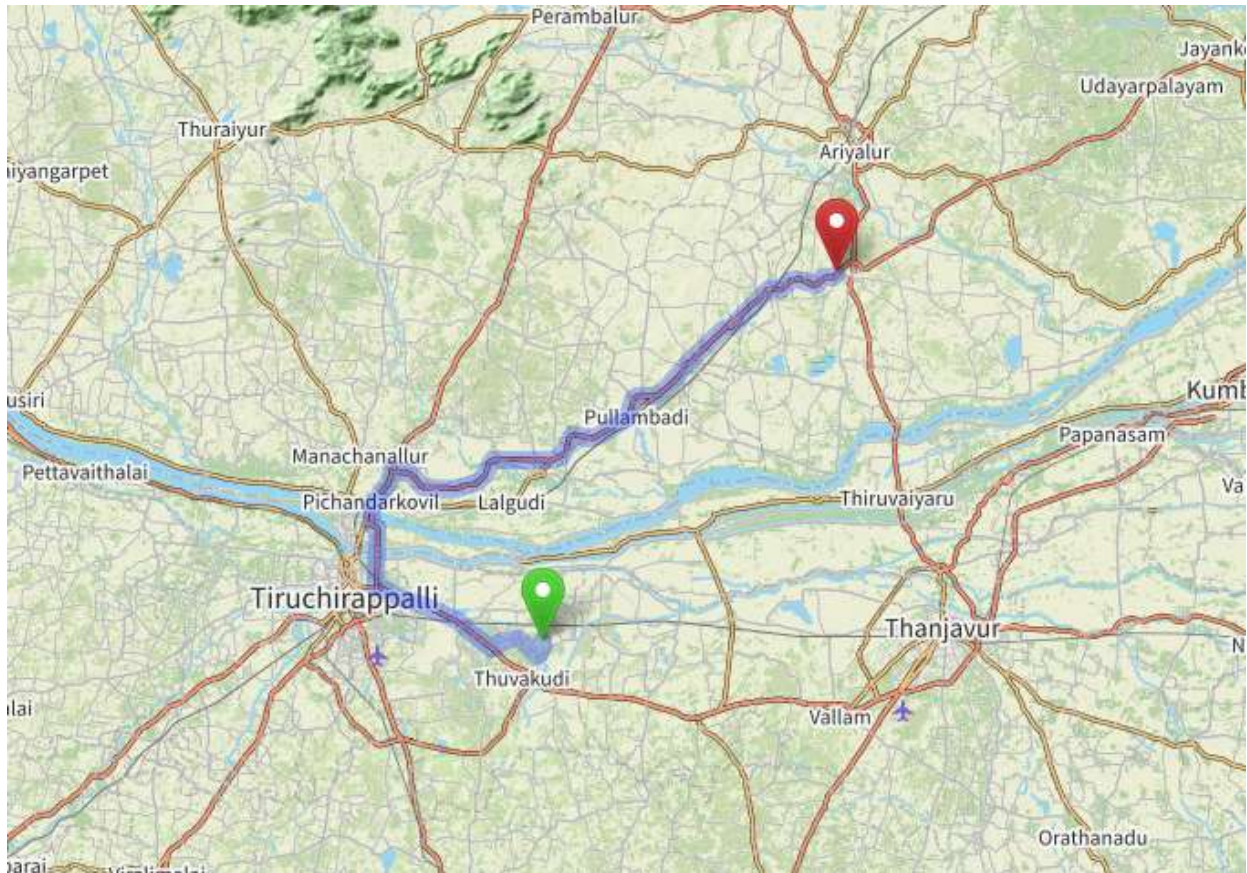
JOURNEY RISK MANAGEMENT REPORT

IOCL TIRUCHY TERMINAL (10.7753, 78.8368) TO BALAJI FUELS
(11.04791, 79.078839) TOTAL DISTANCE – 78.1 KM



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Welcome to the Journey Risk Management Study for Balaji Fuels

Total distance: 78.1 km; start with: (10.7753, 78.8368), End with: (11.04791, 79.078839)

- **Route Safety Analysis Report**

1. Overview of the Route Map

Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, Continue on NH 83.

Take NH 38 and NH 81 to Trichy Main Rd Continue onto NH 81, Keep right to stay on NH 81, Continue on Trichy Main Rd to your destination in Keezhapalur and Total distance from Trichy Terminal to BALAJI FUELSIS 78.1 KM.

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Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions: Trichy Terminal (T.N) To BALAJI FUELS experiences a tropical climate with heavy monsoon rains from June to September, high humidity, and moderate temperatures throughout the year, The summers are short and sweltering; the winters are short, cool, and dry; and it is mostly clear year-round. Over the course of the year, the temperature typically varies from 60.8°F to 110°F and is rarely below 60.8°F to 110°F.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)	38.27 (100.89)	38.79 (101.82)	36.78 (98.2)	36.17 (97.11)	35.4 (95.72)	35.03 (95.05)	32.9 (91.22)	30.38 (86.68)	29.34 (84.81)	34.35 (93.83)
Daily mean °C (°F)	26.57 (79.83)	28.67 (83.61)	31.87 (89.37)	34.46 (94.03)	35.18 (95.32)	33.45 (92.21)	32.92 (91.26)	32.18 (89.92)	31.78 (89.2)	29.86 (85.75)	27.44 (81.39)	26.32 (79.38)	30.89 (87.6)
Average low °C (°F)	19.88 (67.78)	20.93 (69.67)	24.04 (75.27)	27.62 (81.72)	28.89 (84.0)	27.59 (81.66)	27.04 (80.67)	26.45 (79.61)	25.95 (78.71)	24.64 (76.35)	22.43 (72.37)	20.93 (69.67)	24.7 (76.46)
Record low °C (°F)	16.0 (60.8)	17.0 (62.6)	19.0 (66.2)	22.0 (71.6)	25.0 (77.0)	25.0 (77.0)	24.0 (75.2)	23.0 (73.4)	22.0 (71.6)	21.0 (69.8)	18.0 (64.4)	17.0 (62.6)	16.0 (60.8)
Average precipitation mm (inches)	12.32 (0.49)	20.82 (0.82)	26.34 (1.04)	57.63 (2.27)	102.32 (4.03)	61.68 (2.43)	63.88 (2.51)	124.75 (4.91)	141.74 (5.58)	231.04 (9.1)	159.62 (6.28)	71.08 (2.8)	89.44 (3.52)
Average precipitation days (≥ 1.0 mm)	3.09	3.27	5.36	7.36	16.73	12.36	13.55	18.91	19.64	22.73	17.55	9.73	12.52
Average relative humidity (%)	72.01	65.19	58.27	53.97	51.56	50.59	51.14	56.11	60.33	70.18	77.39	76.61	61.95
Mean monthly sunshine hours	11.19	11.34	11.34	11.63	12.65	12.68	11.83	11.24	11.05	9.11	7.68	8.29	10.84

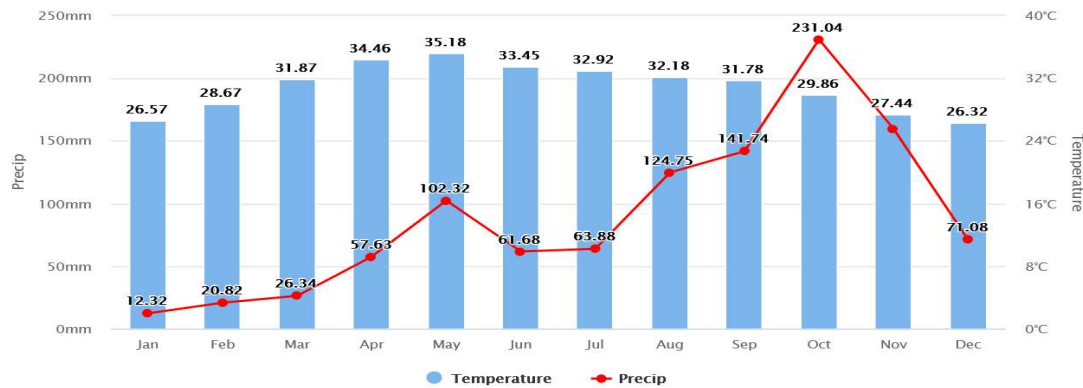
Weather-Related Hazards: Trichy Terminal (T.N) To BALAJI FUELS providing a local hourly weather forecast of rain, sun, wind, humidity and temperature.

The Long-range 12 day forecast also includes detail for weather today. Live weather reports from Trichy Terminal (T.N) To BALAJI FUELS weather stations and weather warnings that include risk of thunder, high UV index and forecast gales.

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Climate Graph

The chart below shows the mean monthly temperature and precipitation of Tiruchirappalli in recent years.



Analysis of Traffic Patterns

Peak Hours:

Typically, Trichy Terminal (T.N) To ARIYALUR ACMS AGENCIE
Speak traffic hours are from 8:00 AM to 11:00 AM and 4:00 PM to 8:00 PM on weekdays.

Congestion-Prone Areas:

- SIDCO Industrial Estate
- Jude Digital Studios
- GOLDEN STEEL COMPANY
- Lakshmi Hospital
- A.M Hospital
- HOTEL LAYA INN
- Ashva Hyundai
- PUNJAB NATIONAL BANK

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- **Assessment of Road Quality and Infrastructure**

Road Quality: Generally, the roads are well-maintained but can suffer from potholes and waterlogging on State Highway during the monsoon season.

Infrastructure: Adequate signage, street lighting, and traffic signals are present, but some areas may lack proper drainage systems, leading to waterlogging.

- **Suggestions for Alternative Routes for Emergencies**

Alternative Route 1- Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, Continue on NH 83. Take NH 38 and NH 81 to Trichy Main Rd Continue onto NH 81, Keep right to stay on NH 81, Continue on Trichy Main Rd to your destination in Keezhapalur and Total distance from Trichy Terminal to BALAJI FUELSIS 78.1 KM.

Alternative Route 2 :-) Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, Continue on NH 83. Take NH 38 and NH 81 to Trichy Main Rd Continue onto NH 81, Keep right to stay on NH 81, Continue on Trichy Main Rd to your destination in Keezhapalur

Summary of Local Regulations Affecting Hazardous Material Transport

Regulations: Transport of hazardous materials is regulated by the Petroleum and Explosives Safety Organization (PESO) and the Motor Vehicles Act. Specific routes and timings may be restricted for hazardous material transport.

Permits: Ensure all necessary permits and documentation are in place.

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- **Overview of Historical Incidents**

Historical Incidents: There have been occasional incidents involving heavy vehicles, particularly during the monsoon season due to waterlogging and poor visibility. No major incidents involving hazardous materials have been reported recently.

- ❖ **Environmental Considerations and Sensitive Areas**

- **Sensitive Areas:** SIDCO Industrial Estate , Jude Digital Studios, GOLDEN STEEL COMPANY, Lakshmi Hospital, A.M Hospital, HOTEL LAYA INN, Ashva Hyundai, PUNJAB NATIONAL BANK
- **Educational institutions:** Arasu Education - Jcb Institute in Trichy, Gnanam School of Business, ITI College, GOVERNMENT HIGH SCHOOL.
- **Hospital:** - , Lakshmi Hospital, A.M Hospital,
- **Gas Station:** ESSAR petrol pump, SP Petroleum (HPCL), HP PETROL PUMP - M/S. A.V.R. PETROL BUNK, Indian Oil, BPCL Petrol Pump
- **Environmental Impact:** Minimize noise and air pollution, especially in residential and sensitive areas.
- **Air pollution:** Volatile chemicals evaporate during the filling and discharge process, or from leaks.
- **Loss of habitats:** Oil and gas operations can degrade animal habitats and disrupt migratory pathways.
- **Oil spills:** Oil spills can be devastating for animals and humans.
- **Greenhouse gas emissions:** Oil and gas operations can emit greenhouse gases like methane.

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- **Analysis of Communication Coverage**

Communication Coverage: Generally good throughout the route, but potential dead zones may exist densely built-up areas or underpasses.

Dead Zones: Monitor for any communication blackouts, especially in underpasses or near large buildings.

- **Estimated Emergency Response Times:** SIDCO Industrial Estate, Jude Digital Studios, GOLDEN STEEL COMPANY, Lakshmi Hospital, A.M Hospital, HOTEL LAYA INN, Ashva Hyundai, PUNJAB NATIONAL BANK. Areas like, have quicker response times (15- 20 minutes). Congested areas may experience delays (up to 30-40 minutes).

- **Overall Summary of Risk Assessment**






- **Risk Level:** Moderate to High, especially during monsoon season.
- **Key Risks:** Waterlogging, traffic congestion, and potential communication dead zones.
- **Mitigation Measures:** Plan travel during non-peak hours, ensure proper vehicle maintenance, and have alternative routes and emergency contacts ready and control on the speed limit of the vehicle.

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- Road Signage for TT/PT Driver

Road Traffic Signs in India

Mandatory/Regulatory Signs











 Stop	 Give way	 No entry	 Straight prohibited
 One way	 One way	 Vehicles prohibited in both directions	 Horn prohibited
 Pedestrians prohibited	 Cycles prohibited	 Right turn prohibited	 Left turn prohibited
 U-turn prohibited	 Overtaking prohibited	 Trucks prohibited	 Tonga prohibited

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 <p>All motor vehicles prohibited</p>	 <p>Hand cart prohibited</p>	 <p>Bullock cart prohibited</p>	 <p>Bullock and hand carts prohibited</p>
 <p>No parking</p>	 <p>No parking or stopping</p>	 <p>Speed limit</p>	 <p>Axle load limit</p>
 <p>Width limit</p>	 <p>Weight limit</p>	 <p>Length limit</p>	 <p>Load limit</p>
 <p>Restriction ands</p>			

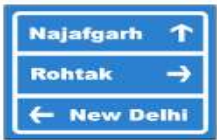

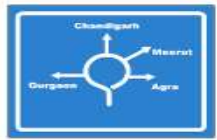
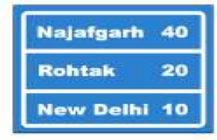
















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Cautionary signs

			
Right hand curve	Left hand curve	Right hand pin bend	Left hand pin bend
			
Right reverse bend	Narrow bridge	Gap in median	Cycle crossing
			
Pedestrian crossing	School	Men at work	Roundabout
			
Narrow road	Road widens	Side road left	Side road right

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Information signs

			
Advance direction	Map type advance direction	Rotary intersection	Reassurance
			
Direction	Direction	Place identification	Truck lay bay
			
Toll booth ahead	Parking this side	Parking both sides	Cycle stand
			
Scooter and motor cycle stand	Taxi stand	Auto-rickshaw stand	Cycle-rickshaw stand
			
Public telephone	Filling station	Hospital	First aid post

Conclusion

The route for Trichy Terminal (T.N) To BALAJI FUELS is generally manageable but poses several risks, particularly during the monsoon season. Proper planning, adherence to regulations, and awareness of potential hazards can significantly mitigate these risks.

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• Risk Assessment - Sharp Turns

Risk Type	Risk Level	Coordination	Distance From Start	Recommendation Speed
Sharp turn	Medium	10.769517372474736, 78.83735063199906	650 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.76584461192607, 78.8361700257199	1.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.764182189802032, 78.83459588401435	1.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.75826698538096, 78.83349398474651	2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.756372549032195, 78.83034570133539	2.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.751346435623256, 78.8252297405902	3.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.749451955814655, 78.83046376176118	3.8 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.741610640579689, 78.82718594844422	4.8 km	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.734287918634735, 78.82046183804047	5.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.713512709090521, 78.80911996491783	8.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.706666925588681, 78.80782375086409	9.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.699582172344776, 78.80004646577926	10.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.691462364523247, 78.79064891388968	11.9 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.813351843891734, 78.71223714451301	18.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.89797962574703, 78.72545780547037	28.8 KM	10km/hr TO 15 Km/Hr

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Sharp turn	Medium	10.88731892818826, 78.74724473439429	32.0 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.891528694948864, 78.78705221635654	36.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.90676354371489, 78.79848410861239	38.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.906963997050863, 78.84237440923745	43.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.925145393695045, 78.8605375091577	46.7 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.953986260889684, 78.90836238163784	53.3 KM	20km/hr TO 25 Km/Hr
Sharp turn	High	11.004617530027316, 78.97490694730672	63.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	11.024197882179925, 78.99707635506495	66.6 KM	10 km/hr TO 15 Km/Hr
Sharp turn	Medium	11.033476781728618, 79.00829345419032	68.2 KM	20 km/hr TO 25 Km/Hr
Sharp turn	High	11.041140738253576, 79.03141241486841	71.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	11.036676479331485, 79.04252504856304	72.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	11.05418222702206, 79.07126360658081	76.2 KM	10km/hr TO 15 Km/Hr

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CO (11.04791 , 79.078839) TOTAL DISTANCE – 78.1 KM



10.769073692604486, 78.83720120889187

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10.764113439530249, 78.83446118711721



10.758209570013967, 78.83344387884853

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10.75739191738154, 78.83409461405188

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10.75126610223314, 78.82518044583597



10.75028318292191, 78.82795244340517

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10.749185832475025, 78.830459022258

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10.66061597511672, 78.78654572646798



10.642196979947212, 78.78752451242383

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10.605815072546143, 78.78221028938971



10.59057338373165, 78.7823247876881

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10.586671064628458, 78.77752261226252



10.389384108854301, 78.7984169777083

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10.89892821196535, 78.72409384271218



10.907477479515457, 78.79865699093143

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11.033567212011585, 79.0075845282323



11.045718991777905, 79.07126245260132

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