

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

## ECON 0150 | MiniExam 1 | Version A

This MiniExam will take 20 minutes. For each dataset, identify its dimensions and select an appropriate visualization. Answer clearly and concisely. Data tables are provided on pages 3-4.

### Academic Conduct Code

The following academic conduct code is designed to protect the integrity of your work. Print your name/initials beside the three academic honesty agreements. I pledge to my fellow students, the university, and the instructor, that:

- \_\_\_\_ Complete this MiniExam solely using my own work.
  - \_\_\_\_ Not use any digital resources unless explicitly allowed.
  - \_\_\_\_ Not communicate directly or indirectly with others during the MiniExam.
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#### Q1. Student majors at a university (see Table 1)

a) Diagram the data:

- Index Variable(s) Name: \_\_\_\_\_
- Meaningful Variable Type: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

b) Draw the most effective visualization for the question: →

*"Which major has the most students?"*

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#### Q2. Weekly gas prices in Pennsylvania (see Table 2)

a) Diagram the data:

- Index Variable(s) Name: \_\_\_\_\_
- Meaningful Variable Type: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

b) Draw the most effective visualization for the question: →

*"How have gas prices changed over the past many weeks?"*

**Q3. PRT bus rider commute times in minutes (see Table 3)**

**a) Diagram the data:**

- Index Variable(s) Name: \_\_\_\_\_
- Meaningful Variable Type: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

**b) Draw the most effective visualization for the question: →**

*"What is the distribution of bus rider commute times?"*

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**Q4. Annual tax revenue for four cities (see Table 4)**

**a) Diagram the data:**

- Index Variable(s) Name: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

**b) Draw the most effective visualization for the question: →**

*"How did each city's tax revenue change from 2020 to 2024?"*

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**Q5. Restaurant tips by server (see Table 5)**

**a) Diagram the data:**

- Index Variable(s) Name: \_\_\_\_\_
- Meaningful Variable Type: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

**b) Draw the most effective visualization for the question: →**

*"Do tips vary by server?"*

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**Q6. Monthly food bank visits by neighborhood (see Table 6)**

**a) Diagram the data:**

- Index Variable(s) Name: \_\_\_\_\_
- Meaningful Variable Type: \_\_\_\_\_
- Data Structure: \_\_\_\_\_

**b) Draw the most effective visualization for the question: →**

*"What are the trends in food bank visits by neighborhood?"*

# Data Tables

Table 1: Student Majors

Student_ID	Major
S001	Economics
S002	Biology
S003	Economics
S004	Psychology
S005	Psychology
...	...

Table 2: Weekly Gas Prices (\$/gallon)

Week	Price
2024-01	3.45
2024-02	3.52
2024-03	3.48
2024-04	4.23
2024-05	3.45

Table 3: PRT Bus Rider Commute Times (minutes)

Rider_ID	Commute
E001	22.4
E002	45.1
E003	15.8
E004	38.3
...	...

Table 4: Annual Tax Revenue by City (\$millions)

City	2020	2021	2022	2023	2024
Pittsburgh	12.4	14.1	15.8	17.2	18.5
Philadelphia	8.7	9.2	10.5	11.8	13.2
Harrisburg	15.2	16.8	18.1	19.5	21.0
Scranton	6.1	7.3	8.9	10.2	11.8

Table 5: Restaurant Tips by Server

Transaction_ID	Server	Tip
T001	Alice	8.50
T002	Bob	12.00
T003	Alice	6.75
T004	Carol	9.25
T005	Bob	15.50
T006	Carol	7.00

Table 6: Monthly Food Bank Visits by Neighborhood

Neighborhood	Month	Visits
Homewood	Jan	425
Homewood	Feb	512
Homewood	Mar	580
Oakland	Jan	189
Oakland	Feb	213
Oakland	Mar	198
Shadyside	Jan	142
Shadyside	Feb	154
Shadyside	Mar	161