

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.

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?"

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?"

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?"

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?"

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 |