# PROBLEM SET 8: CHARTS AND DATA

## Easy

**1**

| | Original Price | Sale Price |
|---|---|---|
| Store *A* | $25 | $20 |
| Store *B* | $20 | $15 |
| Store *C* | $30 | $25 |
| Store *D* | $35 | $30 |

The chart above shows the original and sale prices of a certain item at each of four different stores. Which of the following stores provides a discount of 20% or more on this item?

I. Store A

II. Store B

III. Store C

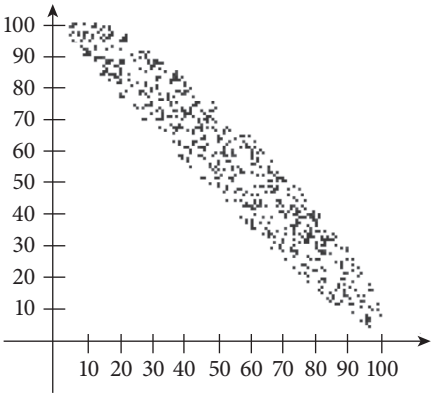
A) I only

B) III only

C) I and II only

D) I and III only

**2**




Which of the following is most likely the slope of the line of best fit for the scatterplot above?

A) –10

B) –1

C) 1

D) 10

**Questions 3 and 4 refer to the following information.**

**Favorite Ice Cream Flavors**

| | Men | Women | Total |
|---|---|---|---|
| Chocolate | 74 | 63 | 137 |
| Vanilla | 68 | 22 | 90 |
| Strawberry | 17 | 39 | 56 |
| Cookie Dough | 51 | 87 | 138 |
| Mint Chip | 65 | 14 | 79 |
| Total | 275 | 225 | 500 |

The table above shows the results of a random survey of 500 men and women. Each individual chose a flavor of ice cream that was his or her favorite.

3

Approximately what percent of the men chose mint chip as their favorite ice cream flavor?

A) 25%

B) 50%

C) 65%

D) 80%

4

If a woman is chosen at random, what is the probability that her favorite ice cream flavor is strawberry?

A) 0.06

B) 0.09

C) 0.11

D) 0.17

## Medium

5

**Bacteria Reproduction**

| Time (in seconds) $t$ | Population (in thousands) $p$ |
|---|---|
| 1 | 2 |
| 2 | 6 |
| 3 | 18 |
| 4 | 54 |

The table above shows the population growth of a certain bacteria over four seconds. Which one of the following equations shows the relationship between $t$ and $p$, according to the table?

A) $p = 3t$

B) $p = 2t^2$

C) $p = 2 \times 3t$

D) $p = 2 \times 3^{(t-1)}$

**Questions 6-8 refer to the following information.**

A coffee distributor randomly polled 200 employees from each of two companies and asked each employee how many cups of coffee he or she drinks per day. The data is shown in the table below.

**Employee Coffee Survey**

| Number of Cups of Coffee | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Company X | 5 | 25 | 30 | 40 | 100 |
| Company Y | 20 | 25 | 35 | 45 | 75 |

There are 4,000 employees at Company X and 3,000 employees at Company Y.

6

Of the employees polled at Company X, approximately what is the average number of cups of coffee consumed per employee on a given day?

A) 1

B) 2

C) 3

D) 4

7

Based on the poll, the number of employees at Company Y who drank 0 cups of coffee was what percent greater than the number of employees at Company X who drank 0 cups of coffee?

A) 75%

B) 100%

C) 300%

D) 400%

8

What is the difference between the expected total number of employees who drink 1 cup of coffee at Company X and the expected total number of employees who drink 1 cup of coffee at Company Y?

A) 0

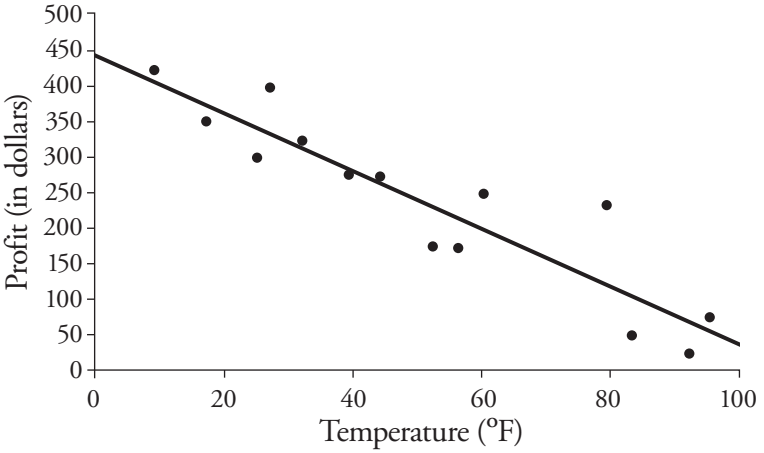
B) 25

C) 125

D) 1,000

## Hard

**Questions 9 and 10 refer to the following information.**




**9**

The scatterplot above shows the daily profit made by a school store from selling sweatshirts and the average daily temperature for several days in the year 2004. The line of best fit is also shown and has equation $y = -4.1x + 446$. Which of the following best explains how the number −4.1 in the equation relates to the scatterplot?

A) For every 1° increase in average daily temperature, the school store's profit fell by approximately $4.10.

B) For every 1° increase in average daily temperature, the school store's profit increased by approximately $4.10.

C) For every 4.1° increase in average daily temperature, the school store's profit fell by approximately $1.00.

D) For every 4.1° increase in average daily temperature, the school store's profit increased by approximately $1.00.

**10**

In a given school week, the average daily temperature is 20°F on Monday, Tuesday, and Wednesday and 30°F on Thursday and Friday. Based on the line of best fit, what was the school store's approximate profit during this school week?

A) $325

B) $650

C) $1,475

D) $1,700