13 + 4 = 17

**Algebra 1 Group Quiz – Chapter 10 ( points)** ****SHOW YOUR WORK****

**Group Number:** Key **Date:** _____ **Block:** _____

0 13

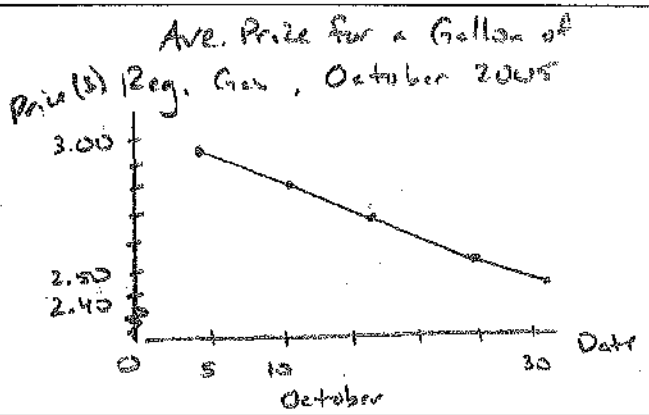
**PART 1: SHORT ANSWER ( points)**

1) Use this data to make a graph. Explain why you chose that type of graph. **( points)** (2)

| Average Price for a Gallon of Regular Gasoline, October 2005 | |
|---|---|
| **Date** | **Price ($)** |
| Oct. 3 | 2.92 |
| Oct. 10 | 2.82 |
| Oct. 17 | 2.69 |
| Oct. 24 | 2.56 |
| Oct. 31 | 2.44 |

Line Graph b/c it shows change over time

✓ * return




2) The low temperatures for Nashville, TN for October 1-15, 2005 are given below. Use this data for questions a-e.

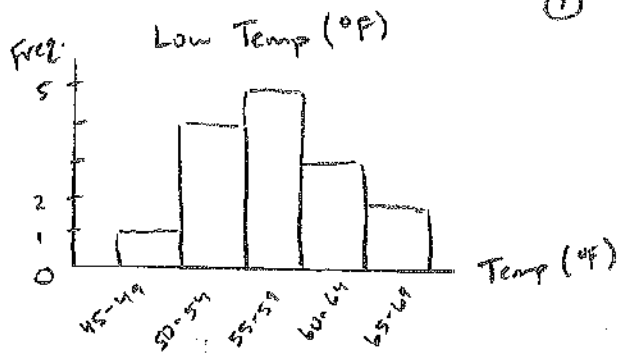
| Low Temperatures (°F) |
|---|
| ~~58 66 67 63 64 60 52 52~~ 54 ~~58 58 54 56 55 49~~ |

~~49 52 52 54 54 55 55 56 56 58 60 63 64 66~~ 64 X X X X X X X X X X X X X X

a) Complete this frequency table. **( points)** (1)

| Temperature (°F) | Frequency |
|---|---|
| 45–49 | 1 |
| 50–54 | 4 |
| 55–59 | 5 |
| 60–64 | 3 |
| 65–69 | 2 |

b) Use your frequency table in question (a) to make a histogram. **( points)** (1)




c) Find the mean, median, and mode. Round answers to the nearest tenth. **( points)** (1)

mean: $\frac{861}{15} = 57.4$ °F

median: 56 °F

mode: 52 °F, 54 °F, 55 °F, 56 °F

d) Identify the minimum, first quartile, median, third quartile, and maximum values. **( points)** (1)

Min = 49

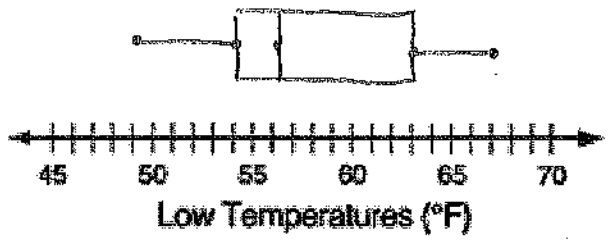
1st Q = 54

Median = 56

3rd Q = 63

Max = 67

e) Use your values in question (d) to make a box-and-whisker plot. **( points)** (1)



3) The number of items correct on a test for ten students are given below. Use the data to make a stem-and-leaf plot. **( points)** (1)
{32, 48, 50, 46, 35, 49, 35, 45, 38, 50}

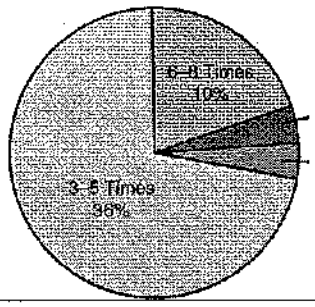
32 33 35 35 45 46 48 49 50 50

# of Items Correct on a Test

| Stem | Leaves |
|---|---|
| 3 | 2 3 5 5 |
| 4 | 5 6 8 9 |
| 5 | 0 0 |

Key: 3|2 = 32 correct items

4) This graph shows the number of absences for students at Central High School. Explain why the graph is misleading. **( points)** (1)




The % only added up to 50%, so 100% of the data is not displayed.

5) A manufacturer inspects 40 computer monitors and finds that 32 have no defects. Use this information for questions (a) and (b). **( points)** (2)

a) What is the experimental probability that a monitor chosen at random has no defects?

$P(\text{no defect}) = \frac{32}{40} = 0.8 \rightarrow$ 80%

b) If the manufacturer sells 20,000 computer monitors, predict how many have no defects.

20000 · 0.8 = 16,000 monitors have no defects.

6) The probability of picking a red marble from a bag is $\frac{1}{9}$. What are the odds in favor of picking a red marble? **( points)** (1)

$\frac{1}{8}$

$\frac{1}{9}$ = # of red / total # not red: 9 − 1 = 8

7) A number cube is rolled two times in a row. What is the probability of rolling a 5 both times? **( points)** (1)

$P(1^{st} 5) = \frac{1}{6}$ $P(2^{nd} 5) = \frac{1}{6}$

$P(5 \text{ and } 5) = \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$

**PART 2: EXTENDED RESPONSE ( points)** 2+2+4

**The Games People Play**

Probability is involved in most board and card games. 2

1) There are 108 cards in a deck for the game *Uno*. The table shows the number of each type of card found in an *Uno* deck. What is the probability of randomly selecting a red card from a complete deck of *Uno* cards?

replacing it in the deck, and then choosing a Wild Draw Four?

| Type of Card | Number in Deck |
|---|---|
| Blue cards, 0–9 | 19 |
| Green cards, 0–9 | 19 |
| Red cards, 0–9 | 19 |
| Yellow cards, 0–9 | 19 |
| Draw Two | 8 (2 in each color) |
| Reverse | 8 (2 in each color) |
| Skip | 8 (2 in each color) |
| Wild | 4 |
| Wild Draw Four | 4 |

$P(1^{st} \text{ red}) = \frac{19+2+2+2}{108} = \frac{25}{108}$ $P(2^{nd} \text{ Wild Draw Four}) = \frac{4}{108} = \frac{1}{27}$

$P(\text{red and Wild Draw 4}) = \frac{25}{108} \cdot \frac{1}{27} = \frac{25}{2916}$

2) In the game of *Battleship*, each player chooses locations for small ships on a 10-by-10 grid. Each player guesses grid spaces to try to locate the other player's ships. A correct guess equals a hit, and by hitting each space occupied by a ship, the ship is sunk. The battleship piece occupies four grid spaces. What is the probability that a player guesses four correct grid spaces in a row and sinks the other player's battleship?

$P(G1, G2, G3, G4) = \frac{4}{100} \cdot \frac{3}{99} \cdot \frac{2}{98} \cdot \frac{1}{97} = \frac{24}{94109400} \div 24 = \frac{1}{3921225}$ (2)