

1) Consider the data below which represents the ages of people at a party who wear socks with sandals.

{6, 7, 9, 12, 18, 19, 24, 29, 35, 37}

a) (2 points) Find the mean of the data:

$$\frac{6+7+9+12+\dots+37}{10} = \boxed{19.6}$$

b) (2 points) Find the median of the data:

$$\frac{18+19}{2} = \boxed{18.5}$$

c) (2 points) Find the mode of the data:

$\boxed{\text{None}}$

d) (2 points) Find the range of the data:

$$37 - 6 = \boxed{31}$$

e) (2 points) Find and label the quartiles  $Q_1$ ,  $Q_2$ , and  $Q_3$ .

$$\begin{aligned} Q_1 &= 9 \\ Q_2 &= 18.5 \\ Q_3 &= 29 \end{aligned}$$

2) (8 points) Alice Student is taking 5 courses this semester:

*Running Underwater*—2 credit hours—Grade: A    *Quiet Tap Dance*—3 credit hour—Grade: C  
*Who Really Let the Dogs Out*—4 credit hours—Grade: B    *Tag*—2 credit hours—Grade: A  
*Defense Against the Dark Arts*—3 credit hours—Grade: A

Assuming that a grade of an 'A' is worth 4 point, grade of a 'B' is worth 3 points, and a grade of a 'C' is worth 2 points, determine Alice's grade point average for the semester rounded to two decimal places:

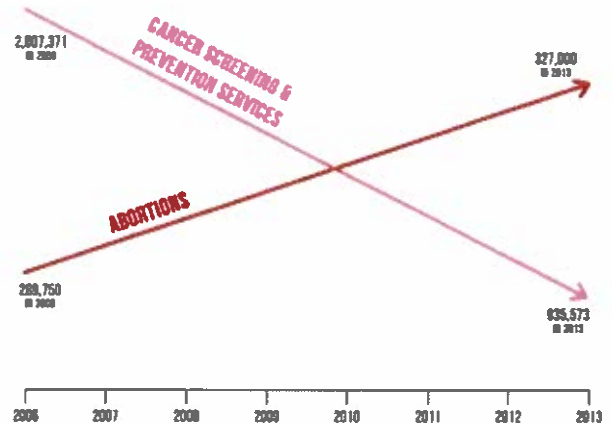
$$\frac{2 \cdot 4 + 3 \cdot 2 + 4 \cdot 3 + 2 \cdot 4 + 3 \cdot 4}{2 + 3 + 4 + 2 + 3} = \boxed{3.29}$$

$\frac{3}{\dots} + 14$

- 3) <sup>54</sup> (points) For the graph to the right, find at least two errors in its presentation.

- No scaling on y  
 - 327,000 is bigger than 955,573

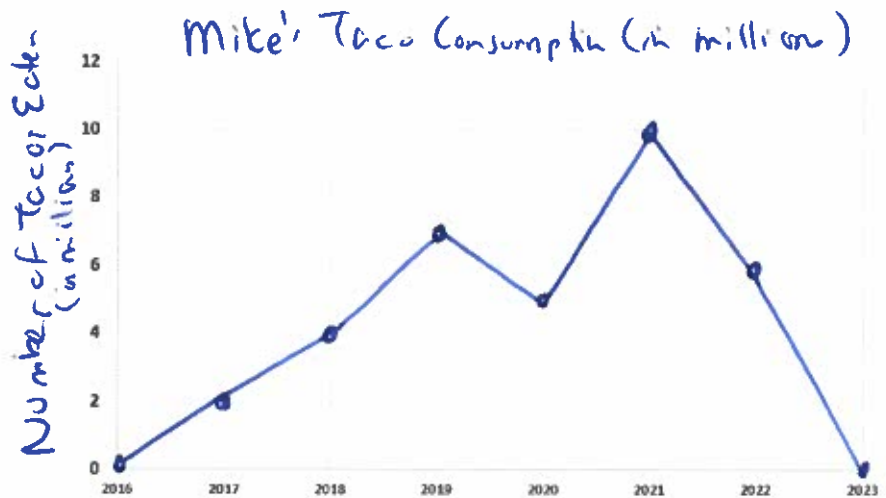
PLANNED PARENTHOOD FEDERATION OF AMERICA:  
 ABORTIONS UP – LIFE-SAVING PROCEDURES DOWN



SOURCE: AMERICANS WRITTEN FOR LIFE

- 4) (5 points) Mike really loves Taco Tuesday. Really, really loves it. The following chart shows number of tacos that Mike ate over the past several years. Draw and label a frequency polygon for the data.

Year	Number of Tacos Mike Ate (in millions)
2017	2
2018	4
2019	7
2020	5
2021	10
2022	6



- 5) (3 points each) Suppose there are 3,500 people at a concert and the ages of the people are normally distributed with a mean of 42 years and a standard deviation of 8 years.

a) What percent of people are younger than 34 years?

$$13.5 + 2.35 = 0.15\%$$

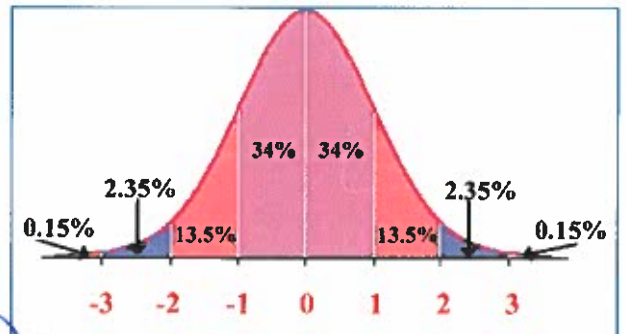
$$= \boxed{16\%}$$

b) What number of people are older than 58 years?

$$2.35\% + 0.15\%$$

of 3500

$$2.5\% \text{ of } 3500 = \boxed{87.5 \text{ people}}$$



18 26 34 42 50 58 66

15

6) (4 points each) The average number of books a child reads over the summer is 6.4 books with a standard deviation of 1.2 books. Suppose a child was randomly picked. What is the probability that they had read. Recall that  $z = \frac{x-\mu}{\sigma}$ .

a) Less than 6 books?

$$z = \frac{6-6.4}{1.2} = -0.33$$

37.07%

b) At least 8 books?

$$z = \frac{8-6.4}{1.2} = 1.33$$

100 - 90.82% = 9.18%  
↳ at least

c) Less than 5 books or more than 7 books?

$$z = \frac{5-6.4}{1.2} = -1.17 \quad \downarrow \quad z = \frac{7-6.4}{1.2} = 0.50$$

12.10% + (100 - 69.15%)  
↳ more than

= 42.95%

d) Between 7 and 9 books?

$$z = \frac{9-6.4}{1.2} = 2.17 \rightarrow 98.50\%$$

$z = \frac{7-6.4}{1.2} = 0.50 \rightarrow 69.15\%$   
between 29.35%

7) (2 points each) Short answer:

a) Explain how to find the median of the set of numbers.

Word

b) When should you use a histogram instead of a bar graph when graphically representing data?

Word

c) When is it not correct to use the 68-95-99.7% Rule?

Moar words!