

1) Consider the data below which represents the number different types of pizzas offered in select pizzerias. Round to two places as needed.

{7, 7, 13, 14, 17, 19, 20, 22, 23, 25, 27, 31}

a) (3 points) Find the mean of the data:

b) (3 points) Find the median of the data:

$$\frac{7 + 7 + 13 + \dots + 31}{12} = \boxed{18.75}$$

$$\frac{19 + 20}{2} = \boxed{19.5}$$

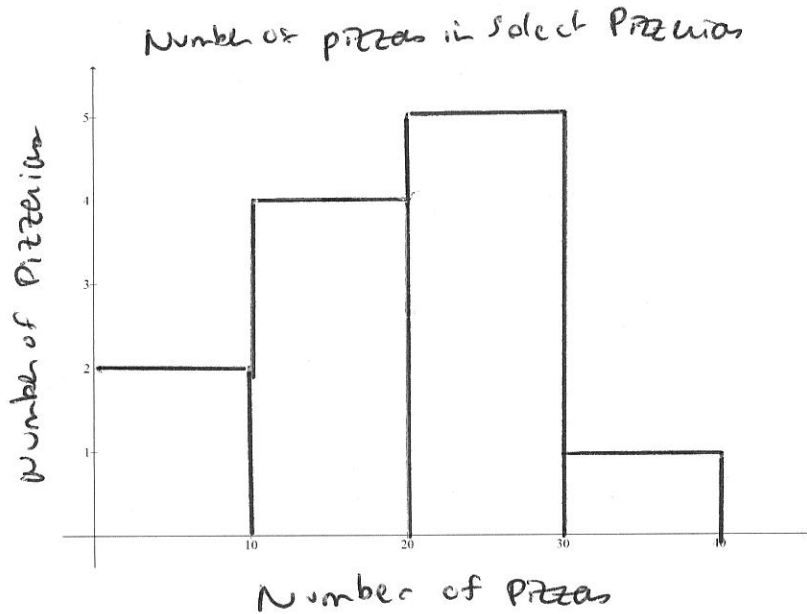
c) (3 points) Find the mode of the data:

d) (3 points) Find the range of the data:

$$\boxed{7}$$

$$31 - 7 = \boxed{24}$$

e) (4 points) Using the classes 0 – 9, 10 – 19, 20 – 29, and 30 – 39 draw and label a histogram for this data:



2) (2 points) Short Answer: Explain how to find the median of the set of numbers:

use your words

18

3) (3 points) Annie Edison is taking 5 courses this semester:

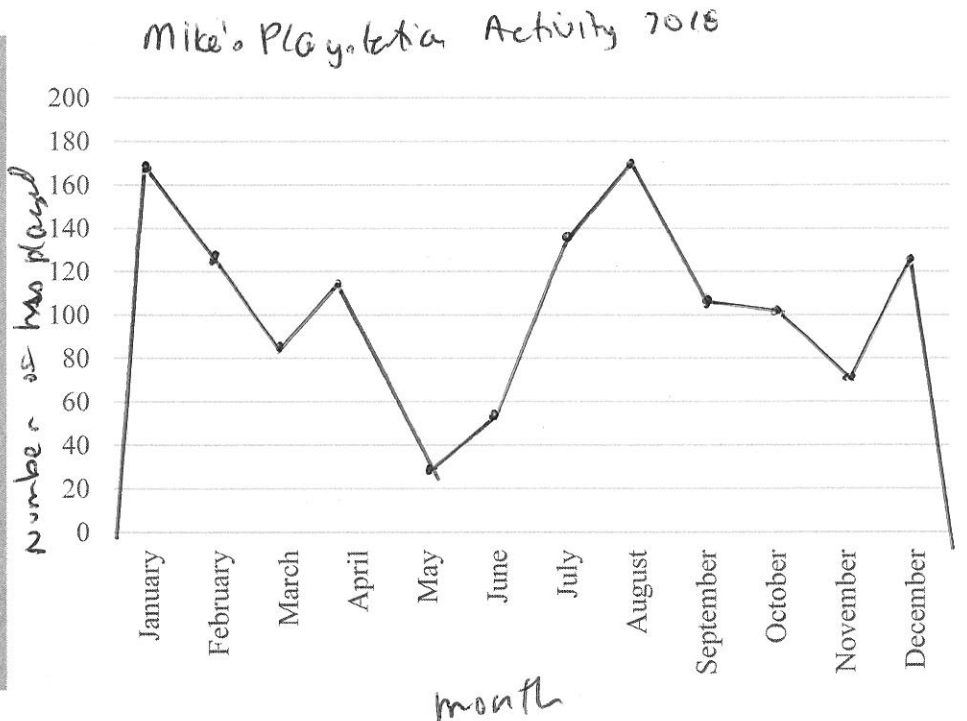
Compute the GPA for a student who has the following grades by using a weighted mean. The grade of A is worth 4 points, a B is worth 3 points, and C is worth 2 points.

Class	Grade	Credits
Taco Tuesday	A	3
Words?	B	2
Southern Civilization	A	4
Phil's Osphy	C	4

$$\frac{4 \cdot 3 + 3 \cdot 2 + 4 \cdot 4 + 2 \cdot 4}{3 + 2 + 4 + 4} = 3.23$$

4) (4 points) The following chart shows Mike's PlayStation activity during 2018. (Yes, this is actual data—no judging! 😊) Draw and label a frequency polygon representing the number of hours played each month.

	GAMES	TROPHIES	HOURS
January	1	13	172
February	2	13	130
March	0	0	83
April	3	11	118
May	1	0	33
June	0	0	56
July	4	28	139
August	1	24	169
September	4	12	112
October	4	9	102
November	2	8	71
December	3	23	126



5) (4 points each) Suppose there are 7,000 people at a rally and the ages of the people are normally distributed with a mean of 23 years and a standard deviation of 2.5 years.

a) What **percent** of people are older than 28 years?

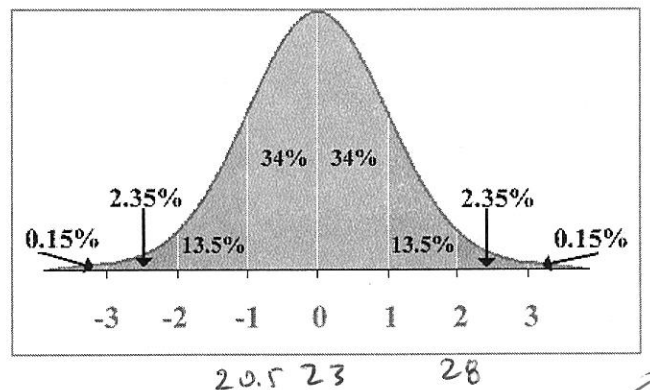
$$2.35\% + 0.15\% = 2.5\%$$

or 2.28% from chart

b) What **number** of people are younger than 21.5 years?

$$0.15 + 2.35 + 13.5\% = 16\% \text{ of } 7000 = 1120 \text{ people}$$

or 110.9 people from chart

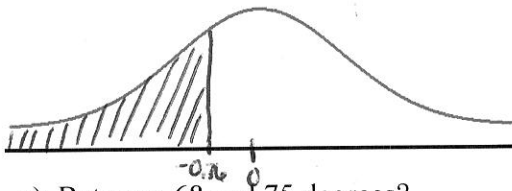


6) (4 points each) The average high temperature during the first week of April in a select city is 72.3 degrees with a standard deviation of 3.6 degrees. Suppose a year is randomly picked. Determine the probability that the average high temperature during the first week of April of that year is in the ranges given below and also shade in the corresponding normal curve:

a) Less than 71 degrees?

$$z = \frac{71 - 72.3}{3.6} \approx -0.36$$

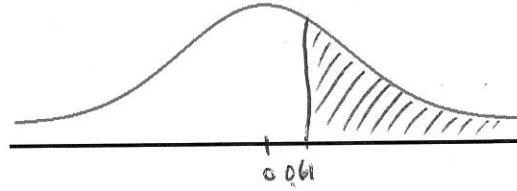
35.94%



b) At least 74.5 degrees?

$$z = \frac{74.5 - 72.3}{3.6} \approx 0.61$$

$$100\% - 72.91\% = 27.09\%$$



c) Between 68 and 75 degrees?

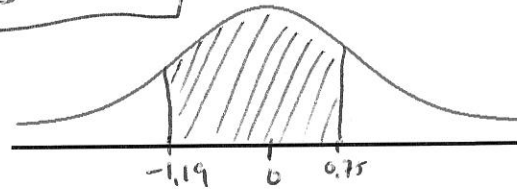
$$z = \frac{75 - 72.3}{3.6} = 0.75$$

$$z = \frac{68 - 72.3}{3.6} = -1.19$$

$$77.34\%$$

$$- 11.70\%$$

$$65.64\%$$



7) (2 points each) Short answer:

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

b) When are you not allowed to use the 68-95-99.7% Rule when computing percentages of a population within a normal distribution?