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:

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

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

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

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

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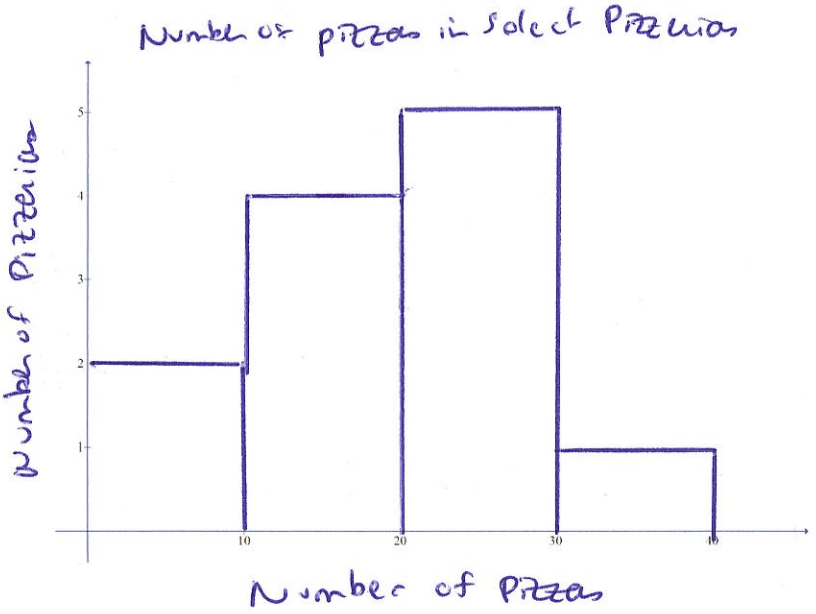
d) (3 points) Find the range of the data:

$31-7 = 24$

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

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

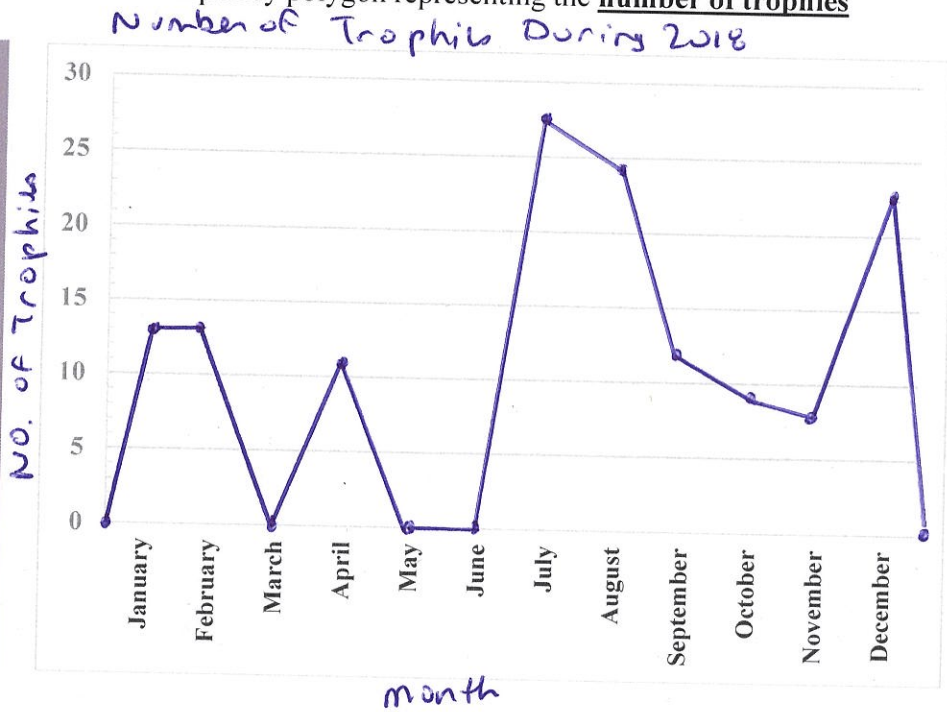
Theoretical Phys Ed—5 credit hours—Grade: A *Reading?—4 credit hour—Grade: B*
Studyology—4 credit hours—Grade: B *Principles of Intermediate—2 credit hours—Grade: A*
Introduction to Basics—3 credit hours—Grade: C

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 Annie's grade point average for the semester rounded to two decimal places:

$$\frac{5\cdot4+4\cdot3+4\cdot3+2\cdot4+3\cdot2}{5+4+4+2+3} = 3.22$$

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 trophies earned 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 23,000 students at a protest and the ages of the people are normally distributed with a mean of 16 years and a standard deviation of 2.5 years.

a) What **percent** of students are older ~~than 11 years~~?

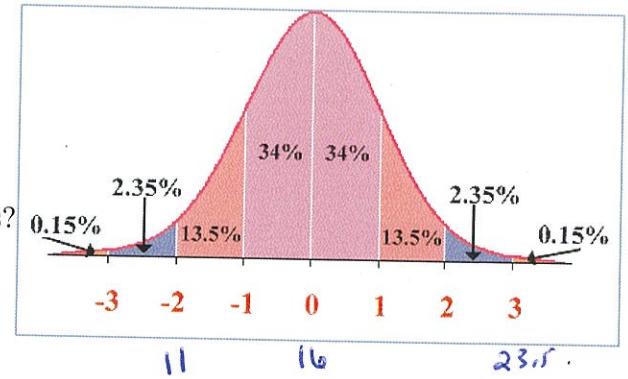
$13.5+34+34+13.5+2.35+0.15\% = 97.5\%$

or 97.72% from normal chart

b) What **number** of students are younger ~~than 23.5 years~~?

99.85% of $23000 = 22{,}965.5$ people

or 22970.1 people from normal chart.



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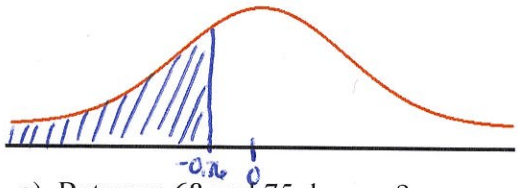
6) (4 points each) The average high temperature during the first week of April in a select city is 72.3 degrees with a standard deviation of 3.6 degrees. Suppose a year is randomly picked. Determine the probability that the average high temperature during the first week of April of that year is in the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

a) Less than 71 degrees?

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

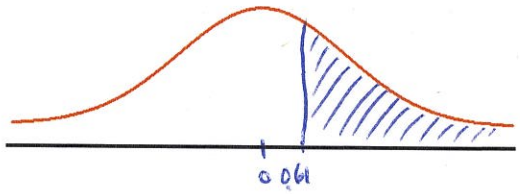
35.94%



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?

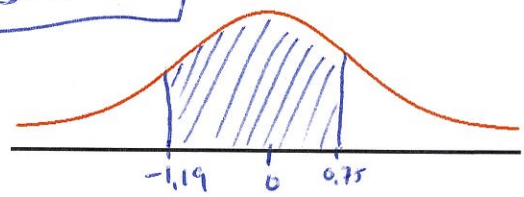
$z = \frac{75 - 72.3}{3.6} = 0.75$

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

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?

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