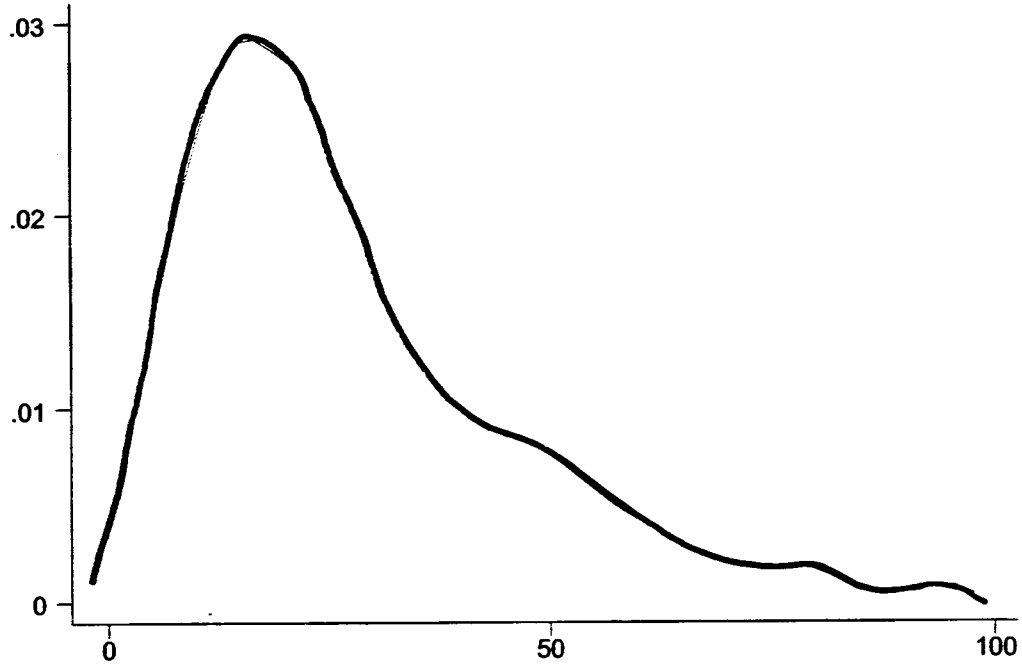
3. (6 points) Classify the following variables as either categorical or numerical by checking the correct box, if it is a numerical variable, further classify the variable as either discrete or continuous:

	Variable	Categorical	Numerical	Discrete	Continuous
A	Political Affiliation	✓			
B	Number of cars in an intersection		✓	✓	
C	Names of Cities	✓			
D	Human Height		✓		✓

4. Here is a histogram, please assume it was correctly drawn



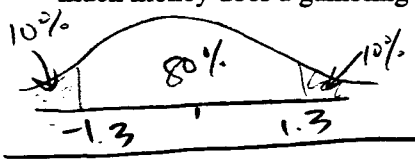
Please answer the following questions about this histogram:

should be # of scores in percent!

True	False	Statement
	✓	If the X axis represents score, the implied Y axis label is score per percent
	✓	The median is greater than the mean
	✓	This histogram is left skewed
✓		This histogram is right skewed
✓		The total area is 1.0 or 100%

The last three questions use information from this statement, but each question is separate (i.e. you can get the first one wrong and it won't affect the others): A recent study showed that the gambling income of adults age 21 and over in the United States from all forms of legalized gambling (e.g. lottery, video poker, horse racing, casinos) is normally distributed with a mean of -350 dollars (a loss) and a standard deviation of $900. SHOW YOUR WORK FOR FULL CREDIT.

5. It is believed that the gamblers with the largest losses, that is those with the lowest 10% of gambling income, should be considered gambling "addicts" and given some kind of treatment. How much money does a gambling adult need to lose to be considered an "addict"? (5 points)



area = 80% → z = 1.30

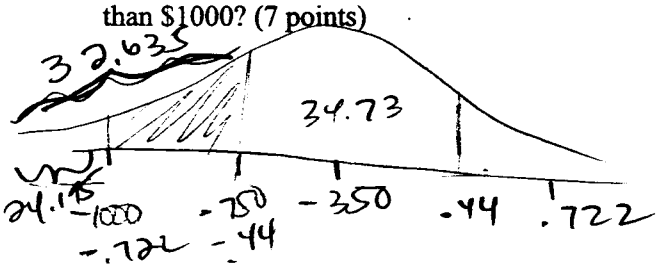
$$\frac{x-(-350)}{900} = -1.3$$

$$x + 350 = -1170$$

$$x = -1520$$

He/she must lose $1520 to be an "addict"

6. What percentage of adults age 21 and over had gambling losses of at least $750 but not more than $1000? (7 points)



$$\frac{-750-(-350)}{900} = -.44\overline{4}$$

area = 34.73%

$$\frac{100-34.73}{2} = 32.635$$

$$\frac{-1000-(-350)}{900} = -.722$$

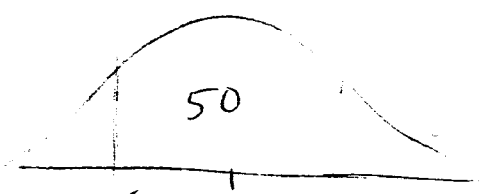
area = 51.61

$$\frac{100-51.61}{2} = 24.195$$

$$32.635 - 24.195 = 8.44\%$$

7. What is the median gambling income? What is the interquartile range for gambling income? (8 points)

median = -350



area = 50% → z = .65

$$.65 = \frac{x+350}{900}$$

$$585 = x + 350$$

$$235 = x$$

$$-.65 = \frac{x+350}{900}$$

$$-585 = x + 350$$

$$-935 = x$$

$$-935 - 235 = -1170$$