Quantitative Graphs

Objectives

1. Create a frequency distribution for quantitative data
2. Create and interpret histograms

Frequency Distribution for Quantitative Data

The weights (in pounds) of 25 husky dogs are shown below:

53	46	44	47	50
49	47	44	61	44
35	46	49	51	48
50	52	44	50	47
58	47	52	37	54

Suppose we want to create a frequency distribution for the weights of these awesome dogs.

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Since this data is quantitative, we are going to have to decide what each of our ranges of weights in our classes is going to be.

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Let's create a frequency distribution for the dog weights using a class width of 5 pounds.

Frequency Distribution of the Weights of Adorable Huskies

Weight	Frequency
35 – 39	2
40 – 44	4
45 – 49	9
50 – 54	8
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However, any dog that weighs more than 39.5 pounds, but less than 44.5 pounds, would have to go into the 40 – 44 pound class.

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However, any dog that weighs more than 39.5 pounds, but less than 44.5 pounds, would have to go into the 40 – 44 pound class.

Going a half of another decimal place below the lower class limit and above the upper class limits give us the **class boundaries**.

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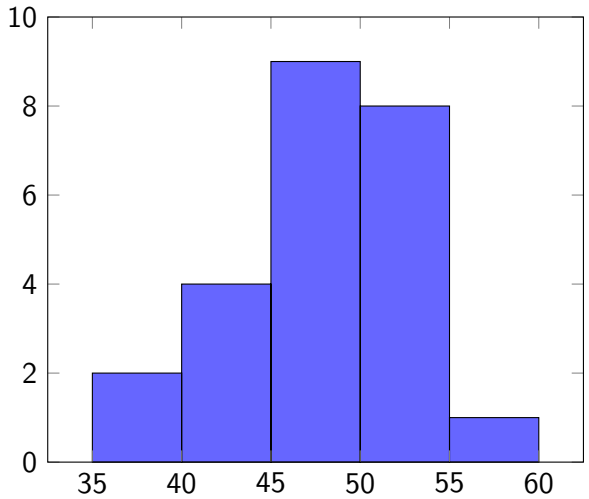

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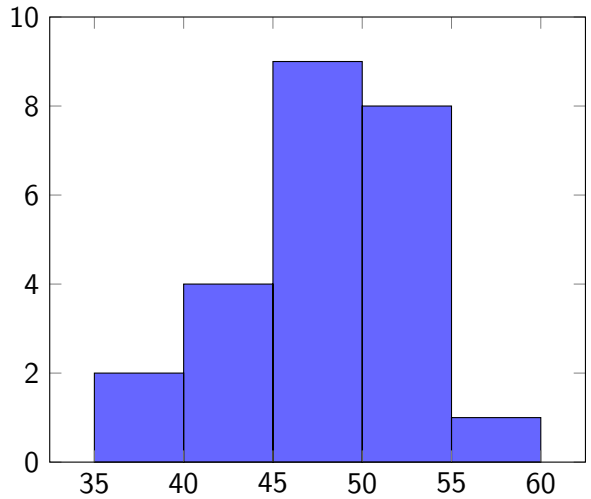

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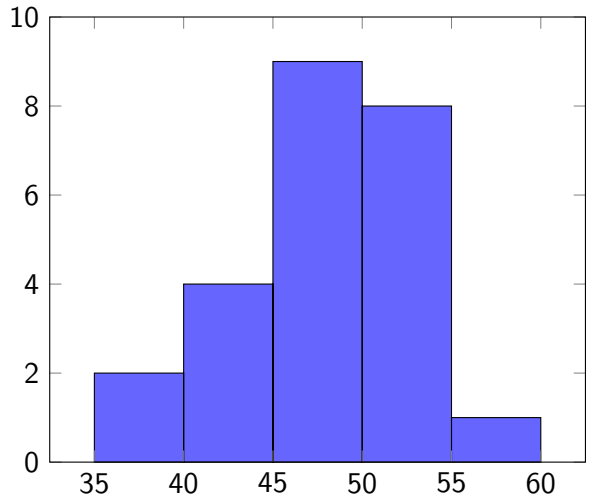
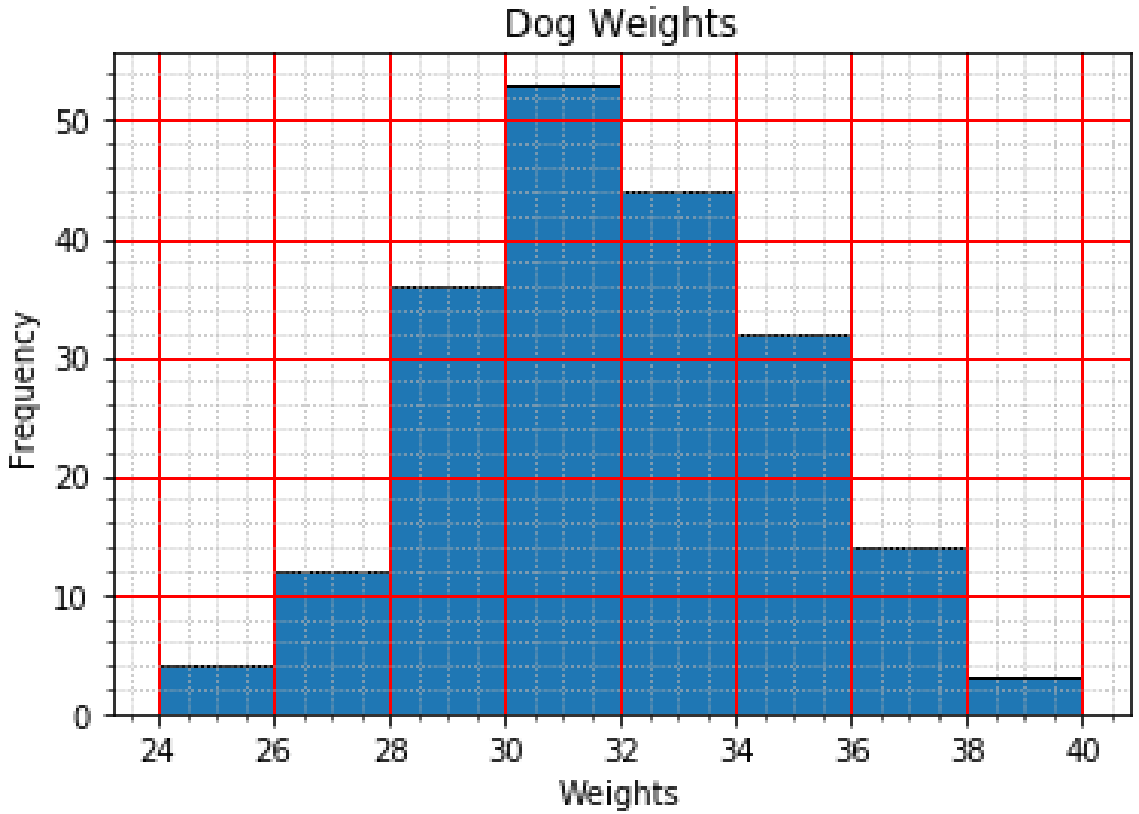


We can also use class midpoints when graphing histograms.

To find the class midpoint, add the lower class limit and upper class limit. Then divide by two.

Example 1

(a) Given the histogram below of the weights of 200 dogs, find the total number of dogs whose weight is at least 34 pounds.



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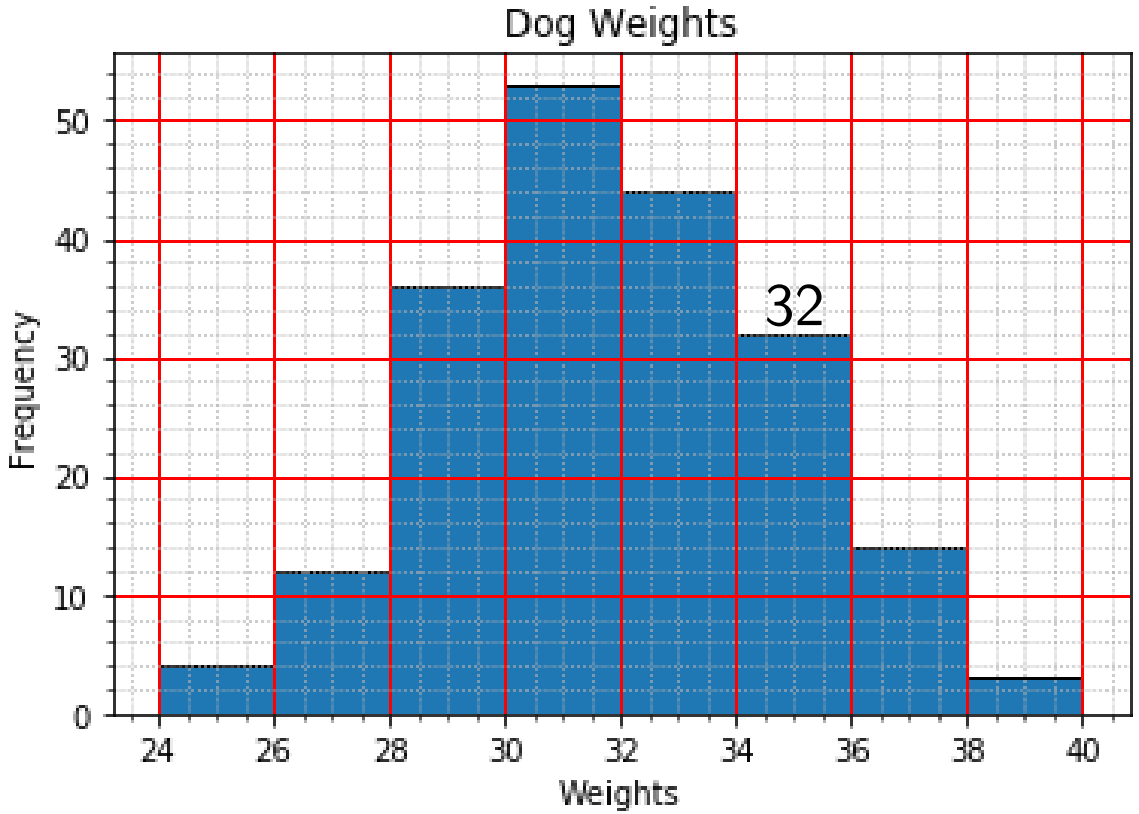

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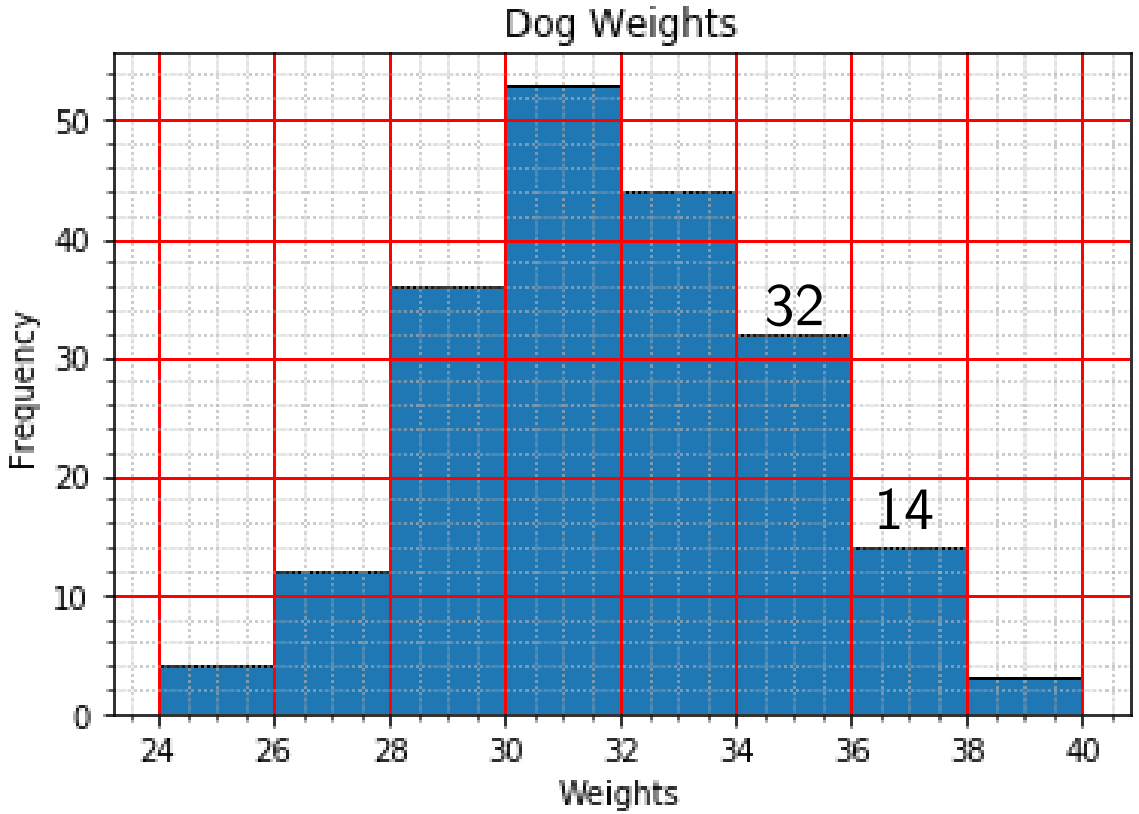

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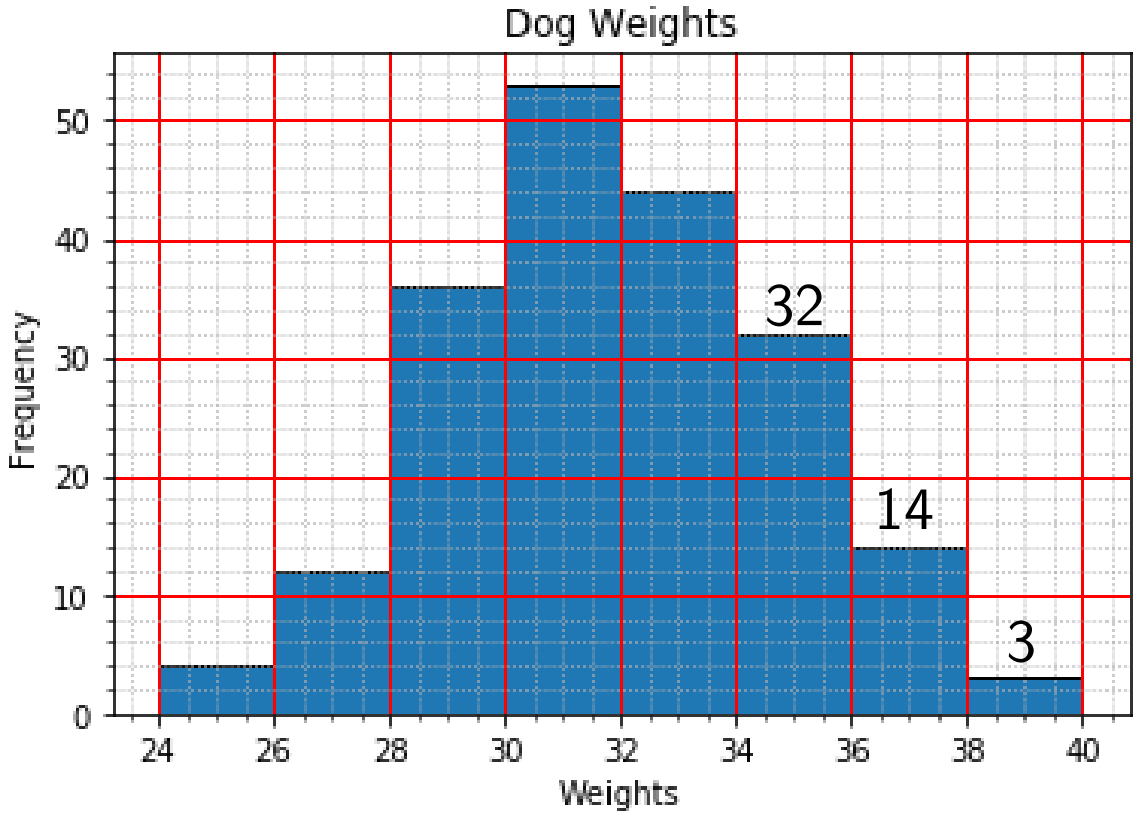

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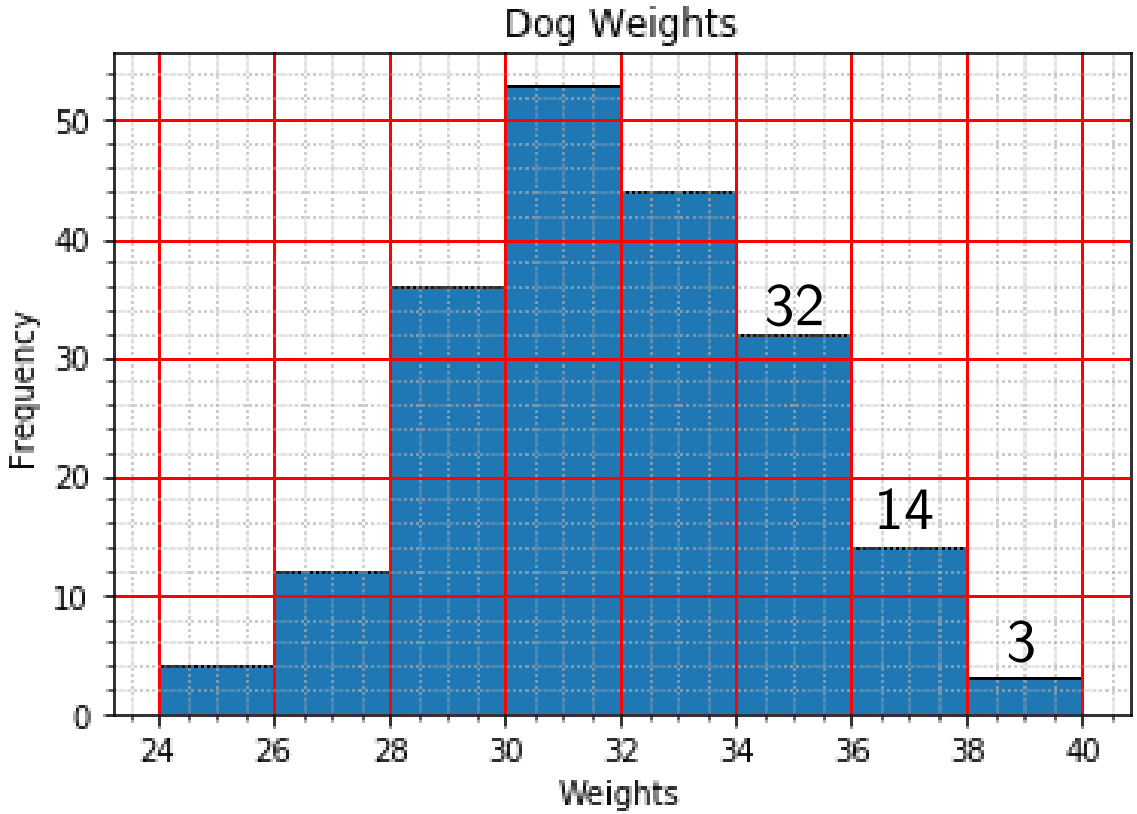
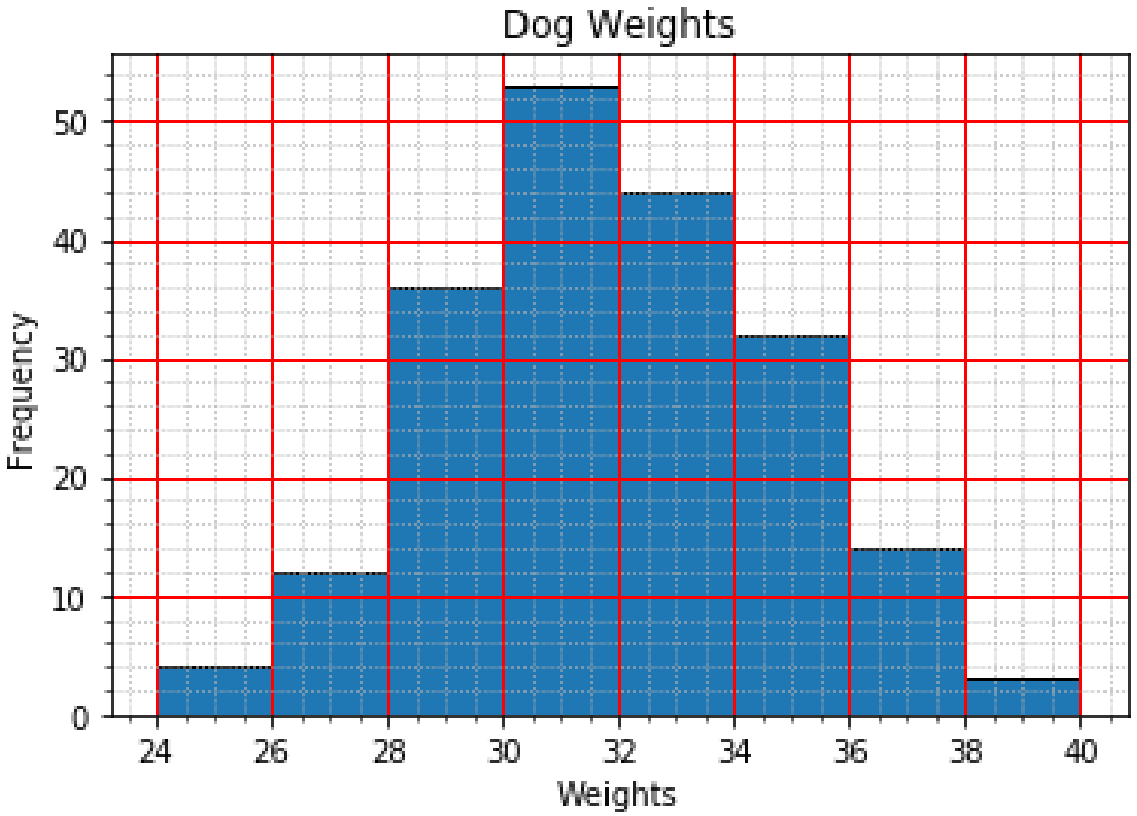


Total: 49

Example 1

(b) What percentage of the dogs have weights between 26 and 28 pounds?



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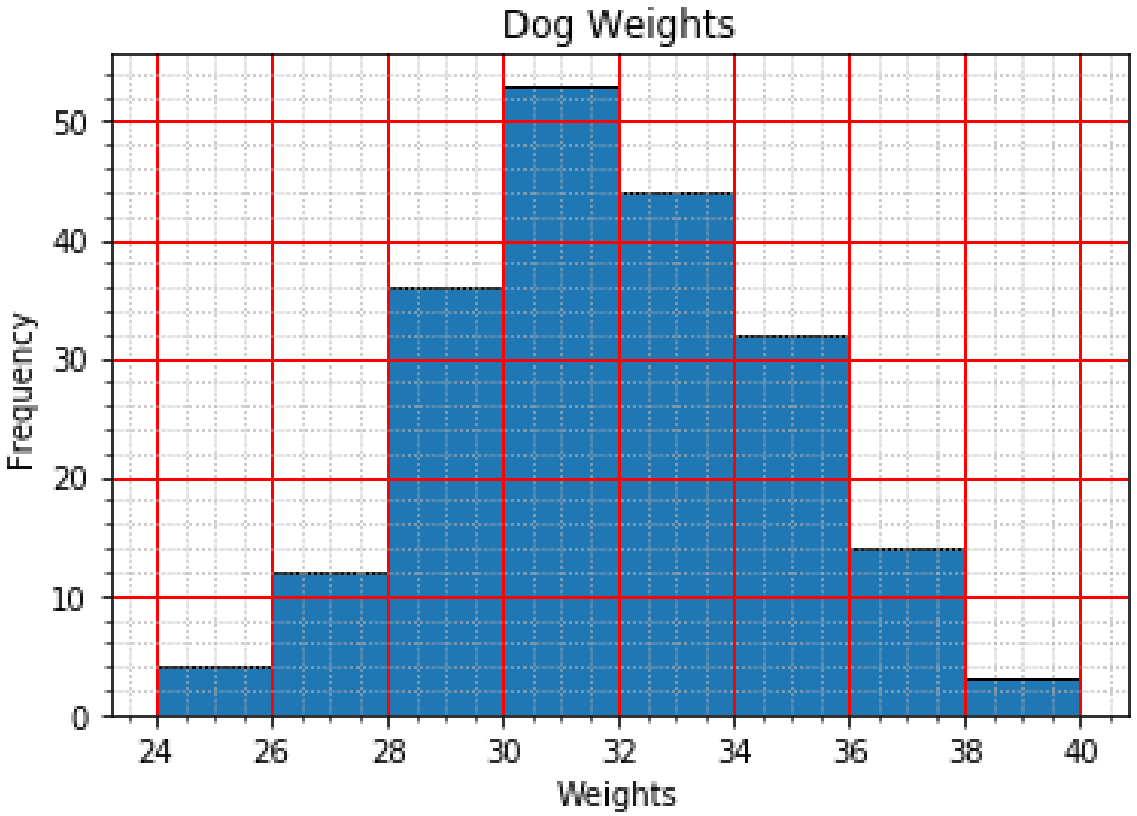

12/200

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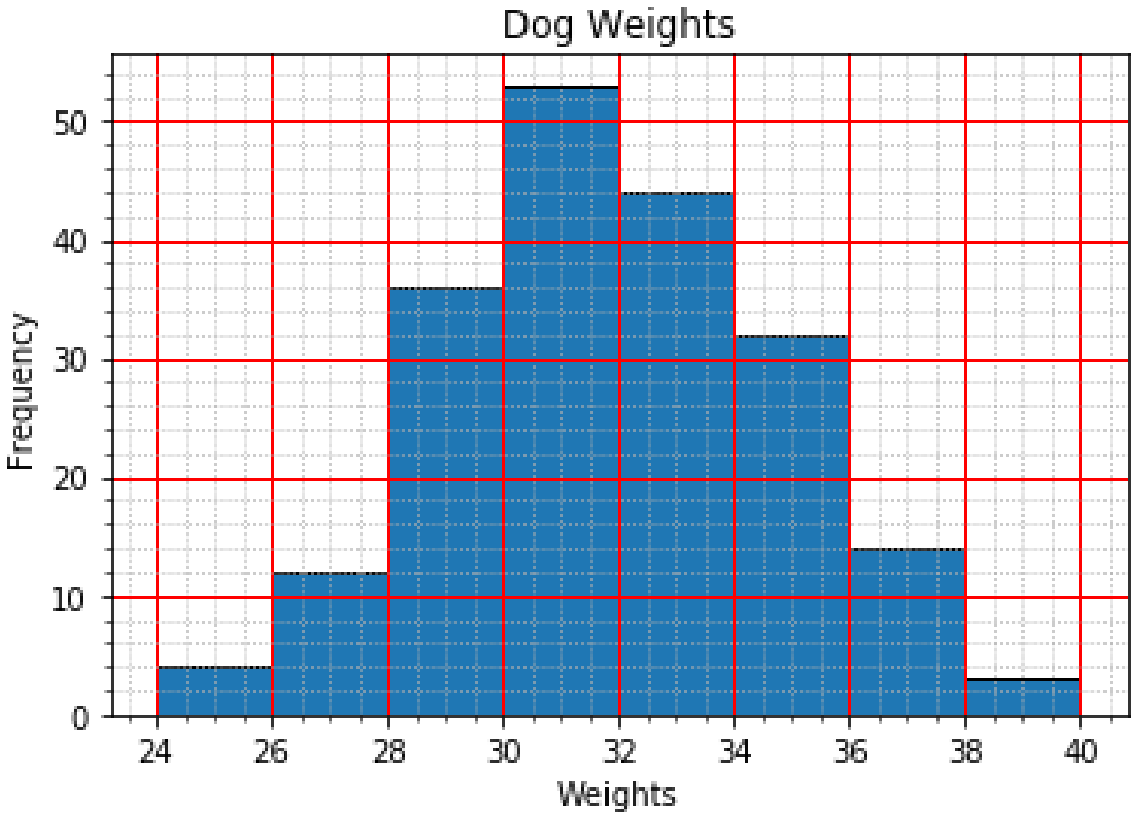

12/200

6%

Relative Frequency Histogram

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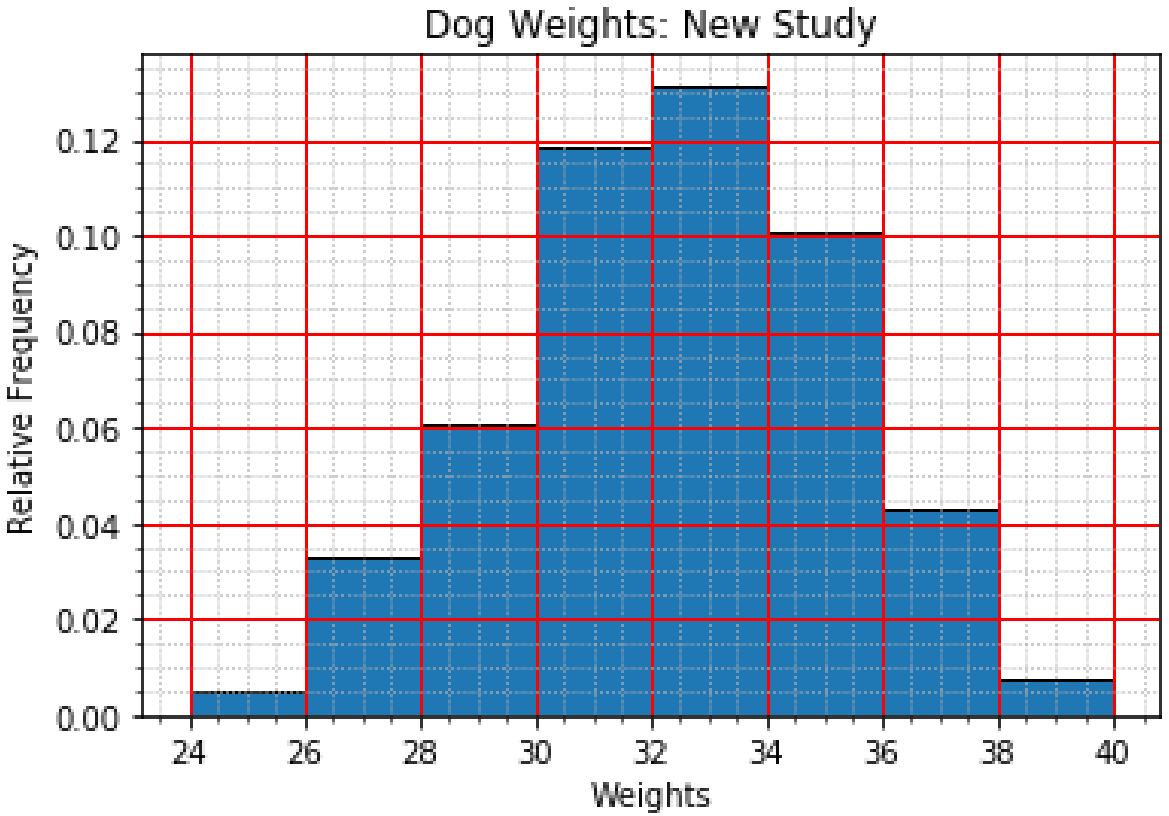
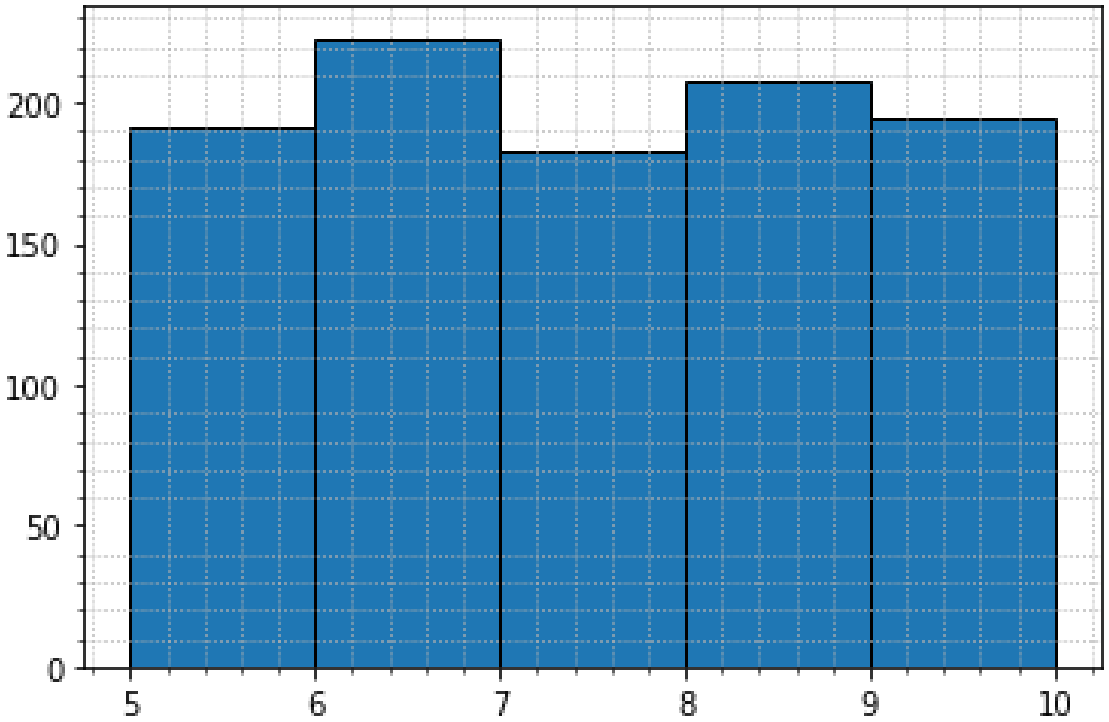


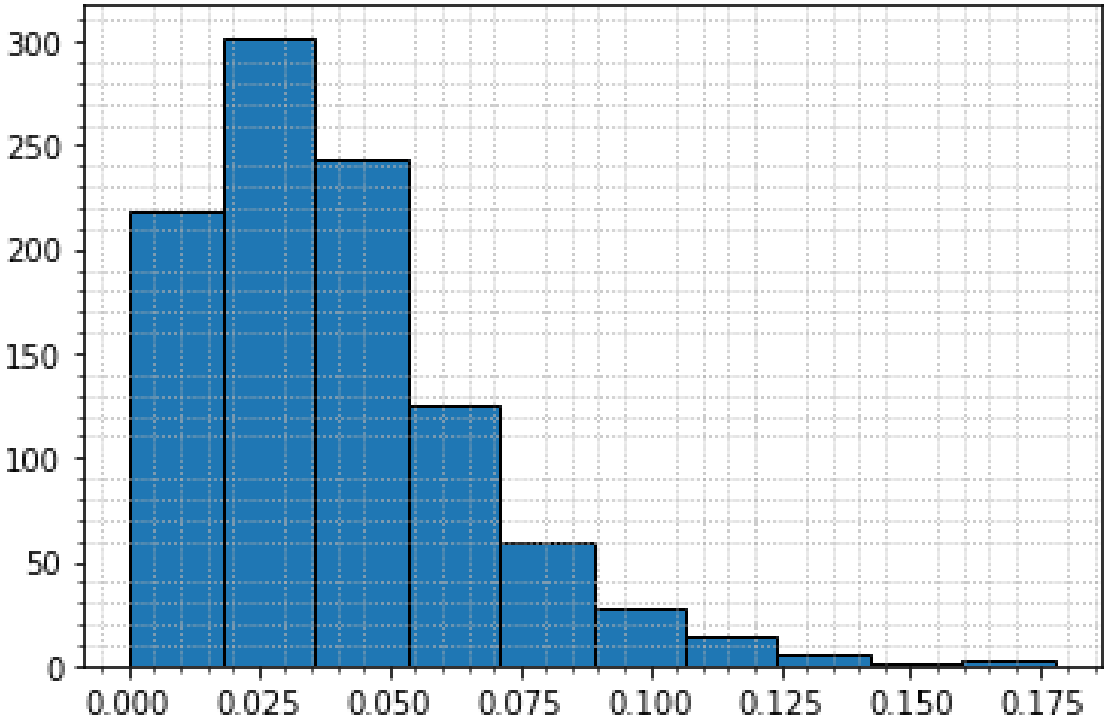
Some Common Histogram Shapes

Uniform distribution:



Som Common Histogram Shapes

Right (a.k.a. positively) skewed



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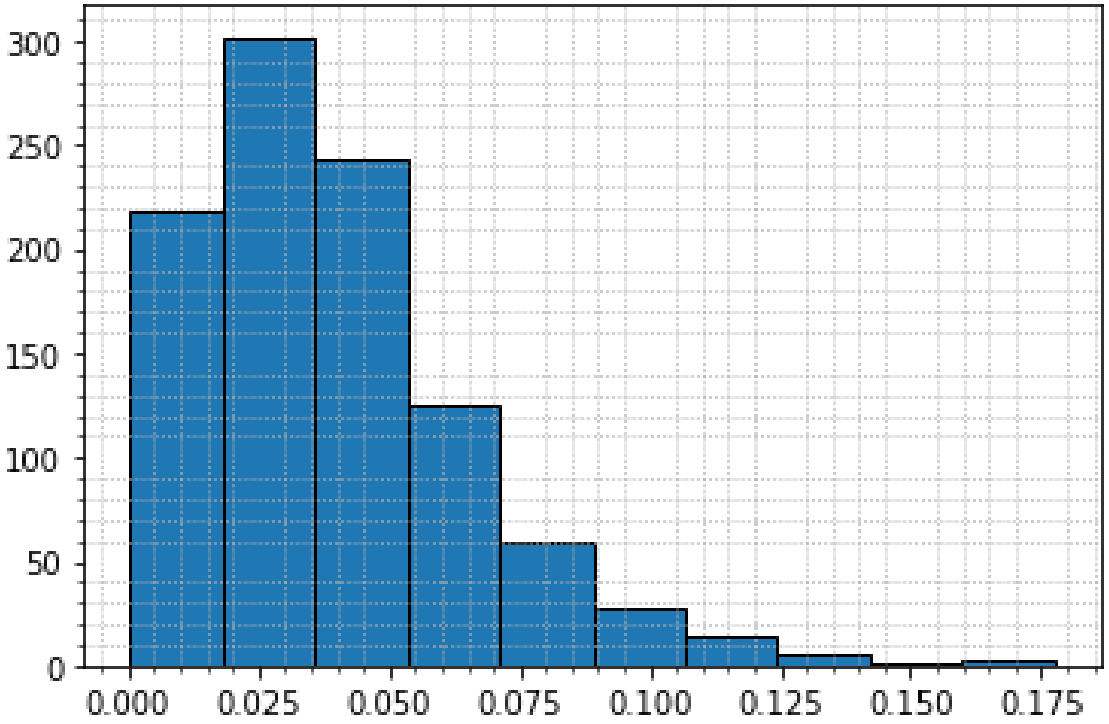
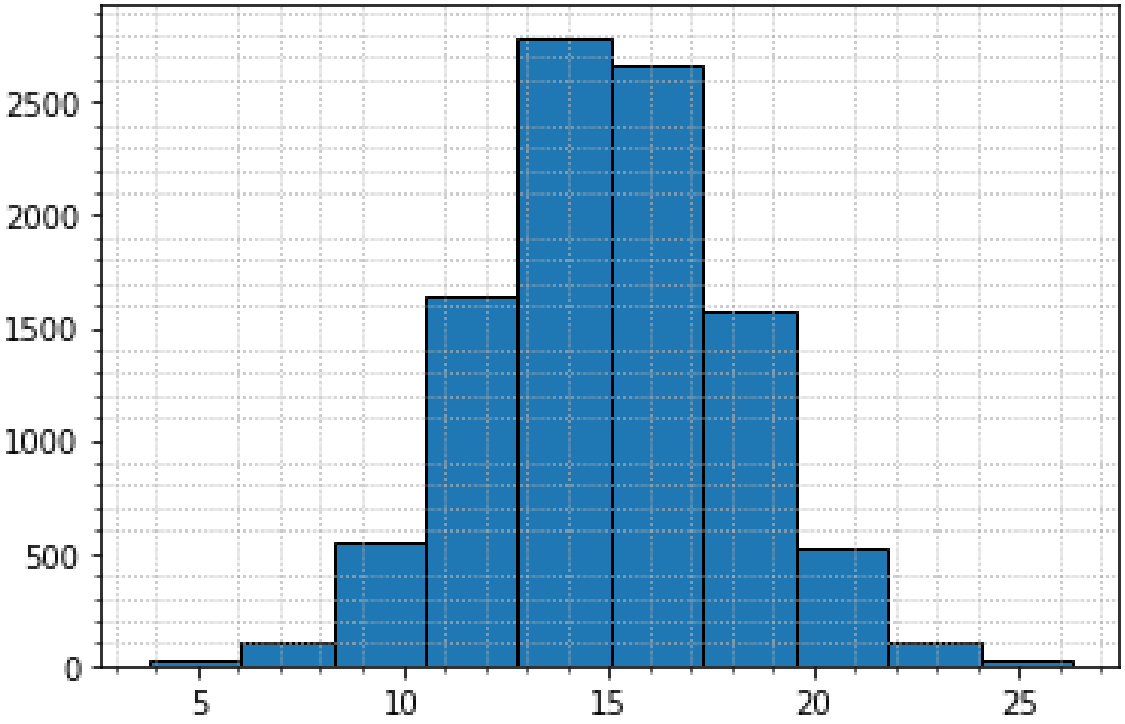


Note: Skewness refers to the tail

Som Common Histogram Shapes

Normal (a.k.a. bell-shaped)



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