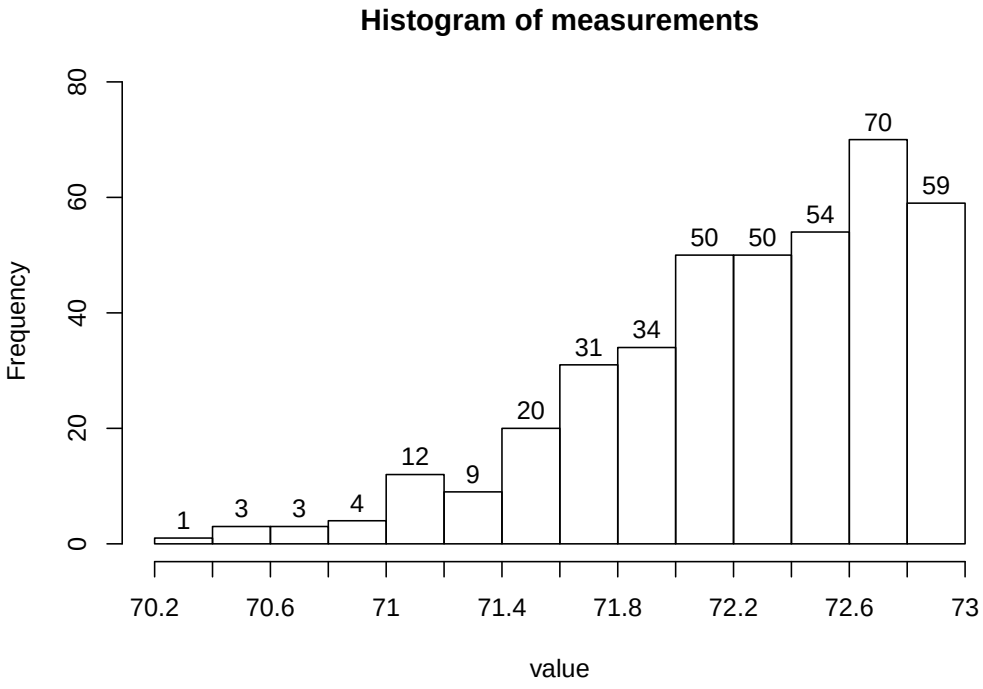
1. **Problem**
   A continuous random variable was measured 400 times. The histogram is shown below.

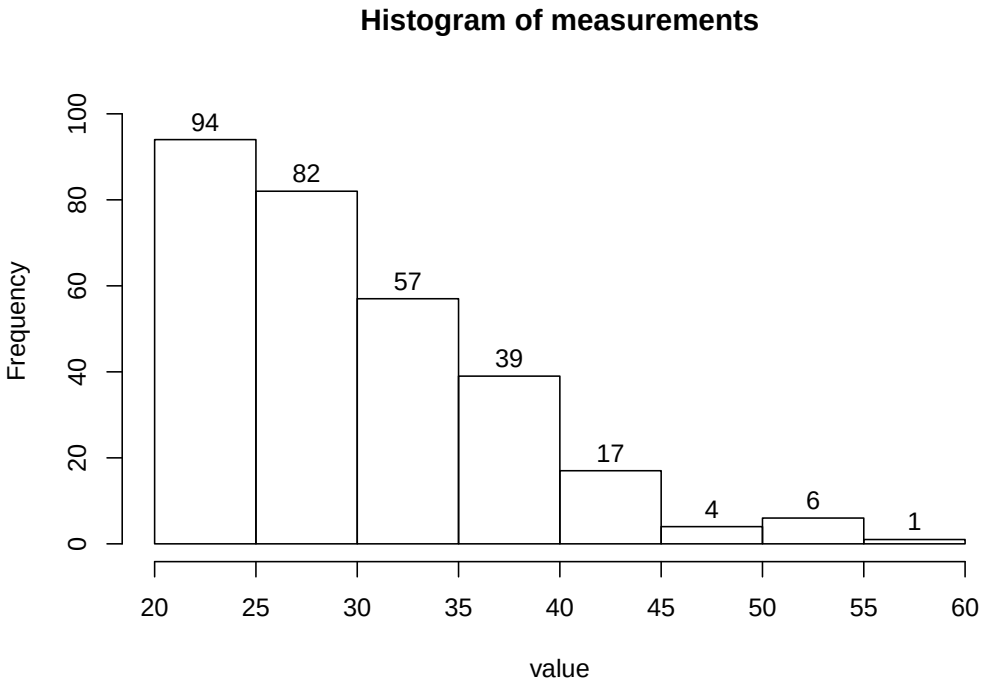


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are less than 72.2?
   (d) What percent of the measurements are greater than 72?
   (e) Of the measurements less than 72.2, what percent are greater than 72?
   (f) Estimate the value of the 67.75th percentile.

Solution

   (a) skew left
   (b) 2.8
   (c) 41.75%
   (d) 70.75%
   (e) 29.94%
   (f) 72.6

2. **Problem**
A continuous random variable was measured 300 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 30?

(d) What percent of the measurements are less than 55?

(e) Of the measurements greater than 30, what percent are less than 55?

(f) Estimate the value of the 96.33th percentile.

Solution

(a) skew right

(b) 40

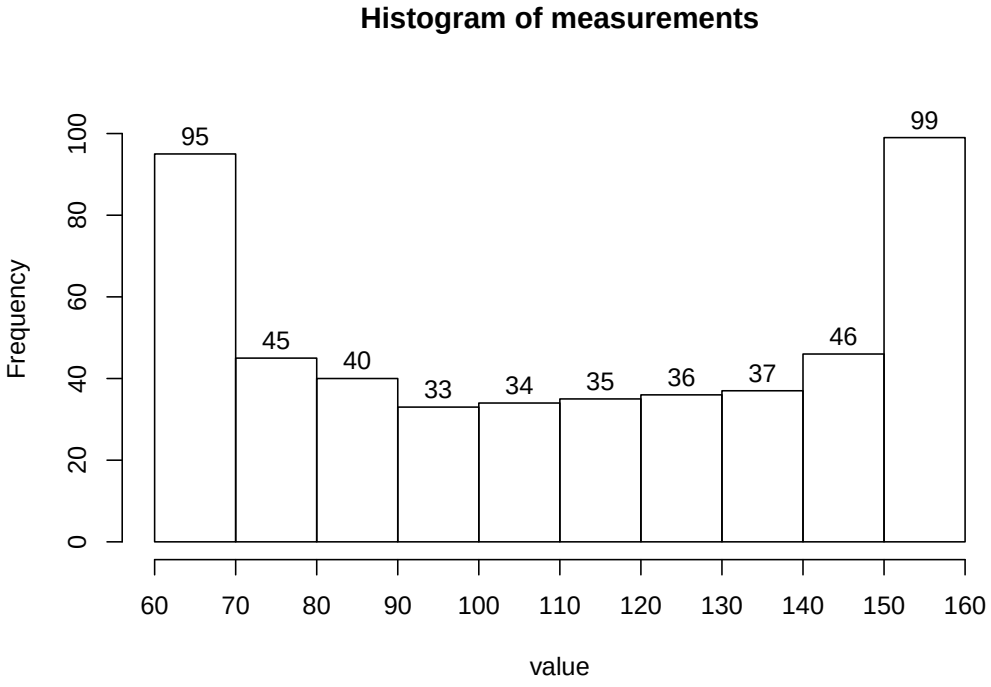
(c) 41.33%

(d) 99.67%

(e) 99.19%

(f) 45

1. **Problem**
   A continuous random variable was measured 500 times. The histogram is shown below.

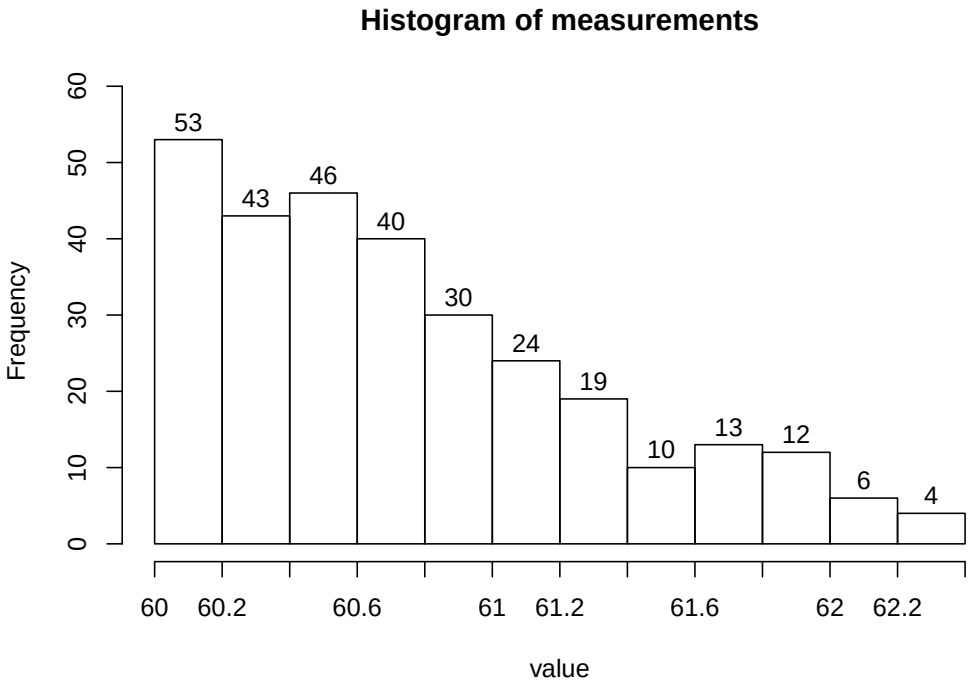


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 130?
   (d) What percent of the measurements are greater than 150?
   (e) Of the measurements greater than 130, what percent are greater than 150?
   (f) Estimate the value of the 71th percentile.

Solution

   (a) bimodal
   (b) 100
   (c) 36.4%
   (d) 19.8%
   (e) 54.4%
   (f) 140

2. **Problem**
A continuous random variable was measured 300 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 61.2?

(d) What percent of the measurements are greater than 61.6?

(e) Of the measurements greater than 61.2, what percent are greater than 61.6?

(f) Estimate the value of the 32th percentile.

Solution

(a) skew right

(b) 2.4

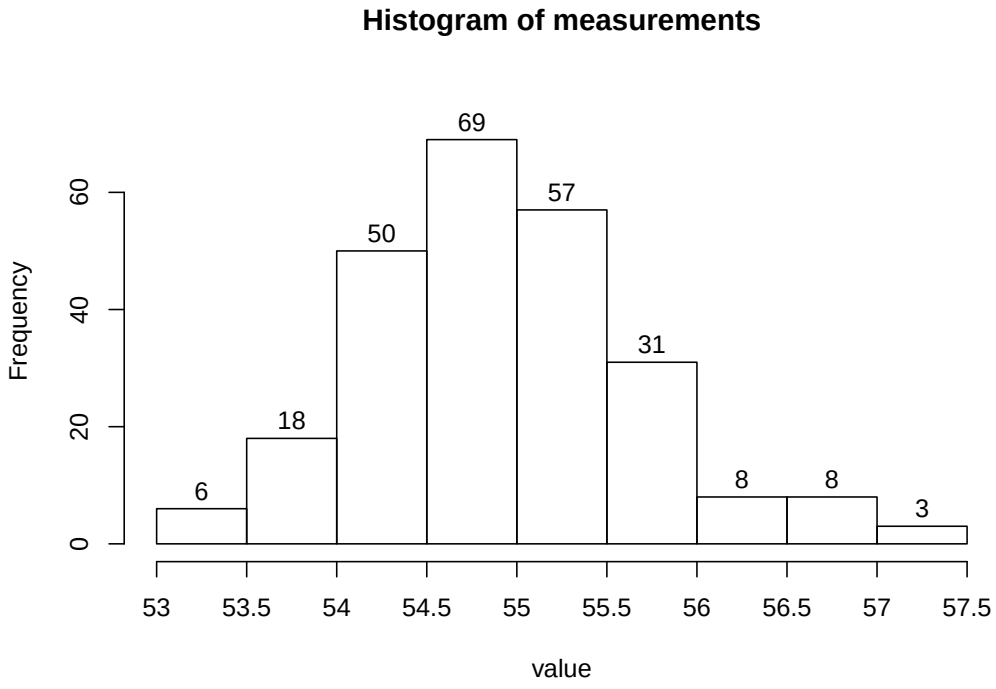
(c) 21.33%

(d) 11.67%

(e) 54.69%

(f) 60.4

1. **Problem**
   A continuous random variable was measured 250 times. The histogram is shown below.

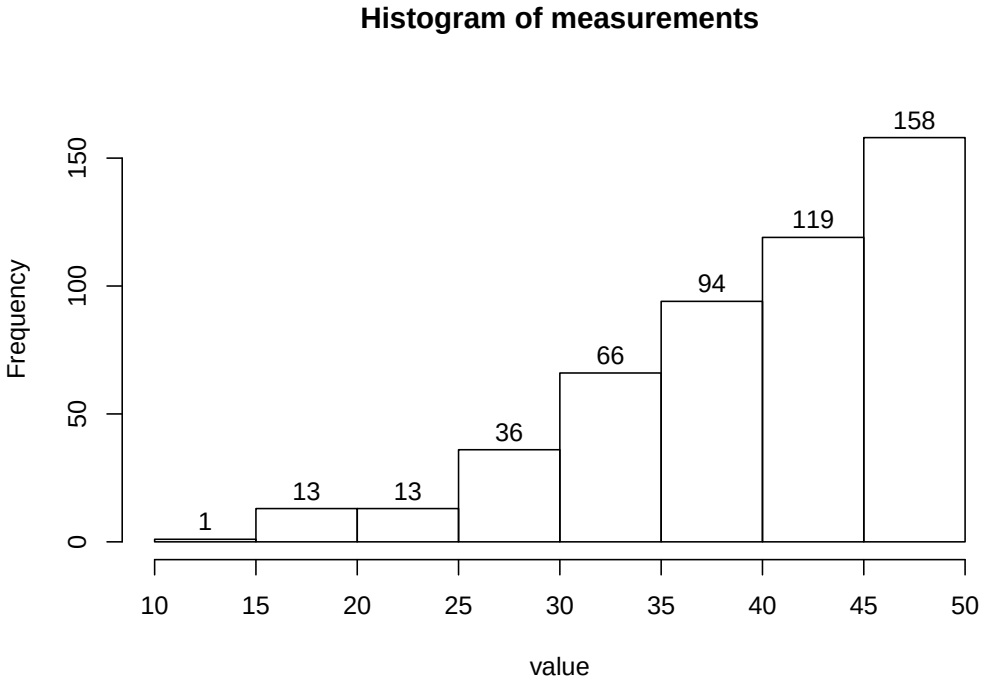


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 54.5?
   (d) What percent of the measurements are less than 55.5?
   (e) Of the measurements greater than 54.5, what percent are less than 55.5?
   (f) Estimate the value of the 95.6th percentile.

Solution

   (a) symmetric mound
   (b) 4.5
   (c) 70.4%
   (d) 80%
   (e) 71.59%
   (f) 56.5

2. **Problem**
A continuous random variable was measured 500 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 30?

(d) What percent of the measurements are greater than 40?

(e) Of the measurements greater than 30, what percent are greater than 40?

(f) Estimate the value of the 25.8th percentile.

Solution

(a) skew left

(b) 40

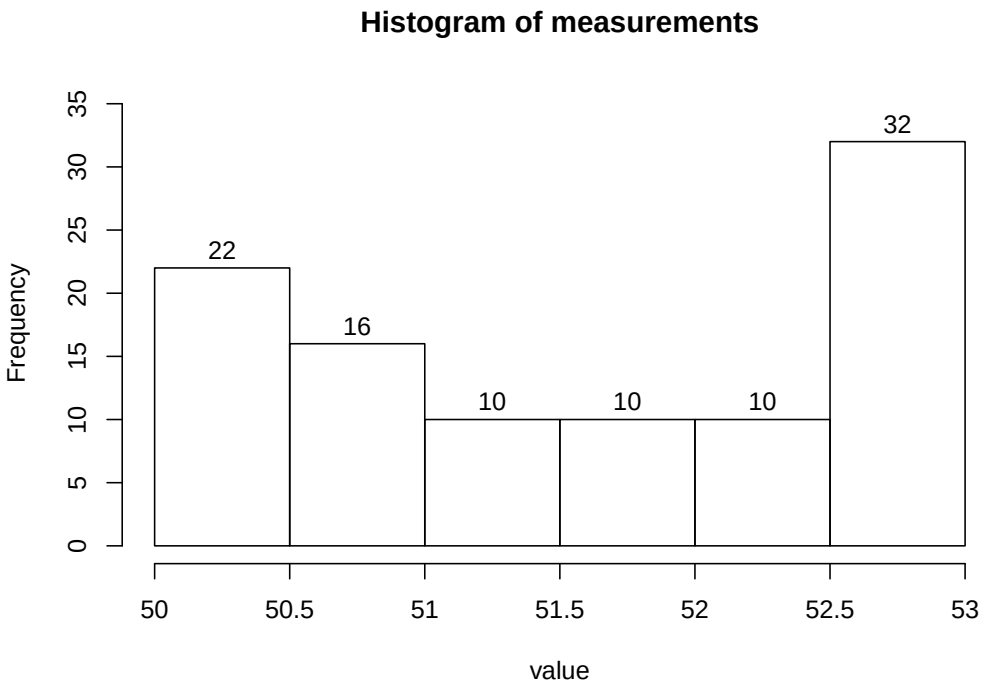
(c) 87.4%

(d) 55.4%

(e) 63.39%

(f) 35

1. **Problem**
   A continuous random variable was measured 100 times. The histogram is shown below.

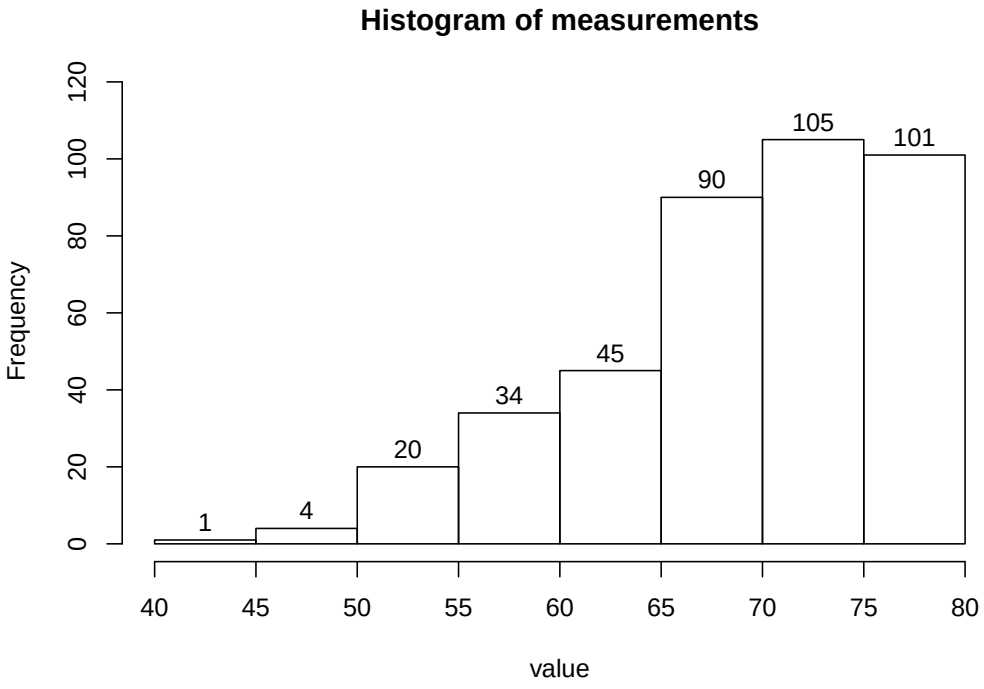


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 51?
   (d) What percent of the measurements are greater than 51.5?
   (e) Of the measurements greater than 51, what percent are greater than 51.5?
   (f) Estimate the value of the 58th percentile.

Solution

   (a) bimodal
   (b) 3
   (c) 62%
   (d) 52%
   (e) 83.87%
   (f) 52

2. **Problem**
A continuous random variable was measured 400 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 65?

(d) What percent of the measurements are greater than 75?

(e) Of the measurements greater than 65, what percent are greater than 75?

(f) Estimate the value of the 14.75th percentile.

Solution

(a) skew left

(b) 40

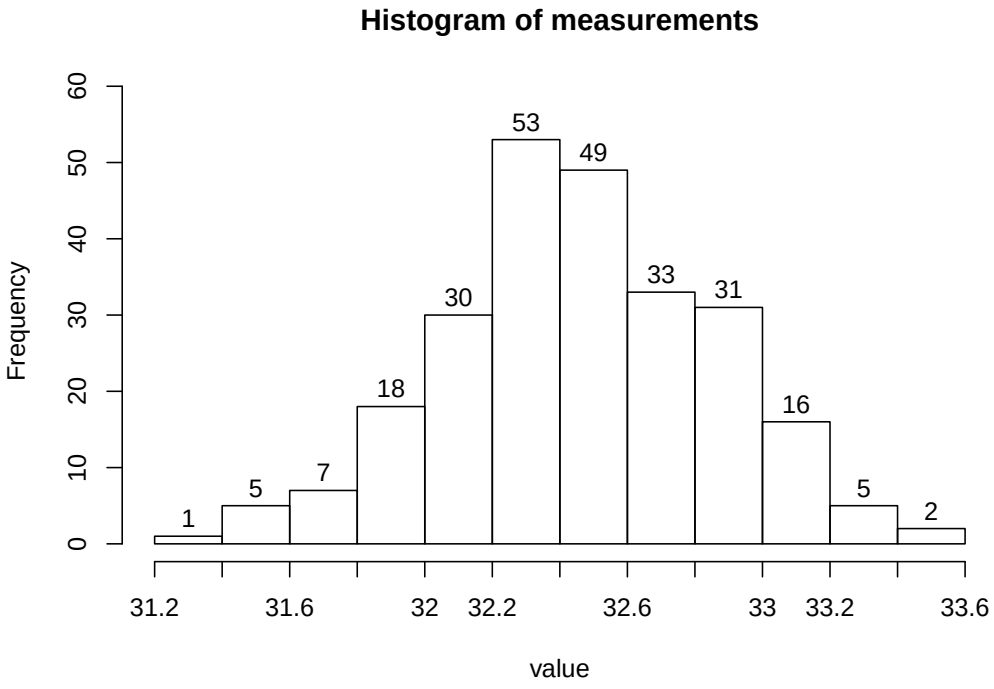
(c) 74%

(d) 25.25%

(e) 34.12%

(f) 60

1. **Problem**
   A continuous random variable was measured 250 times. The histogram is shown below.

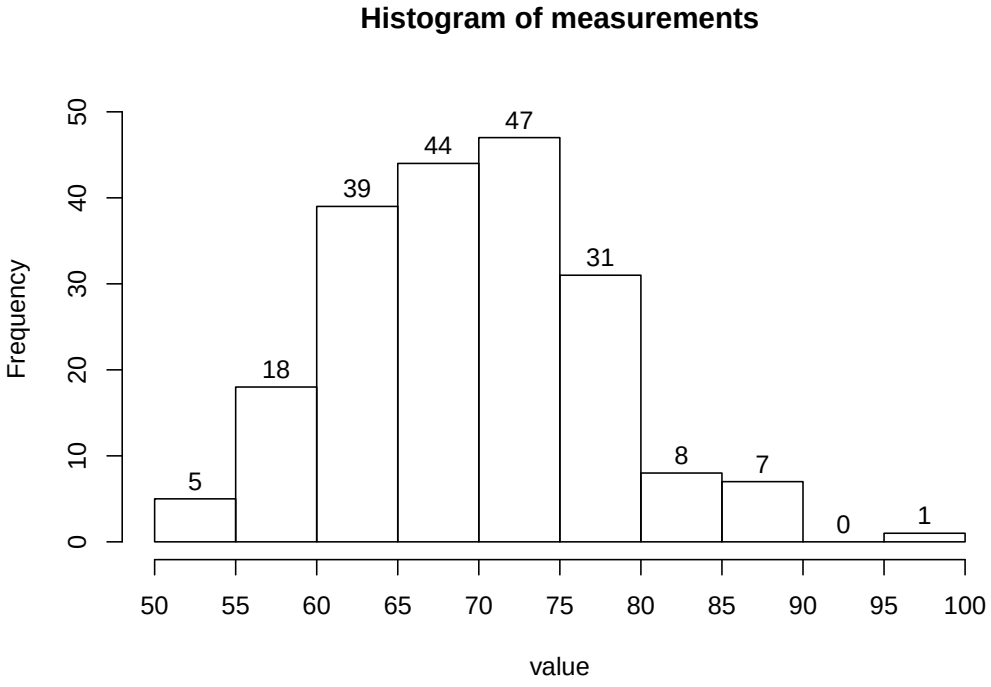


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 32?
   (d) What percent of the measurements are greater than 32.8?
   (e) Of the measurements greater than 32, what percent are greater than 32.8?
   (f) Estimate the value of the 45.6th percentile.

Solution

   (a) symmetric mound
   (b) 2.4
   (c) 87.6%
   (d) 21.6%
   (e) 24.66%
   (f) 32.4

2. **Problem**
A continuous random variable was measured 200 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are less than 75?

(d) What percent of the measurements are less than 70?

(e) Of the measurements less than 75, what percent are less than 70?

(f) Estimate the value of the 11.5th percentile.

Solution

(a) symmetric mound

(b) 50

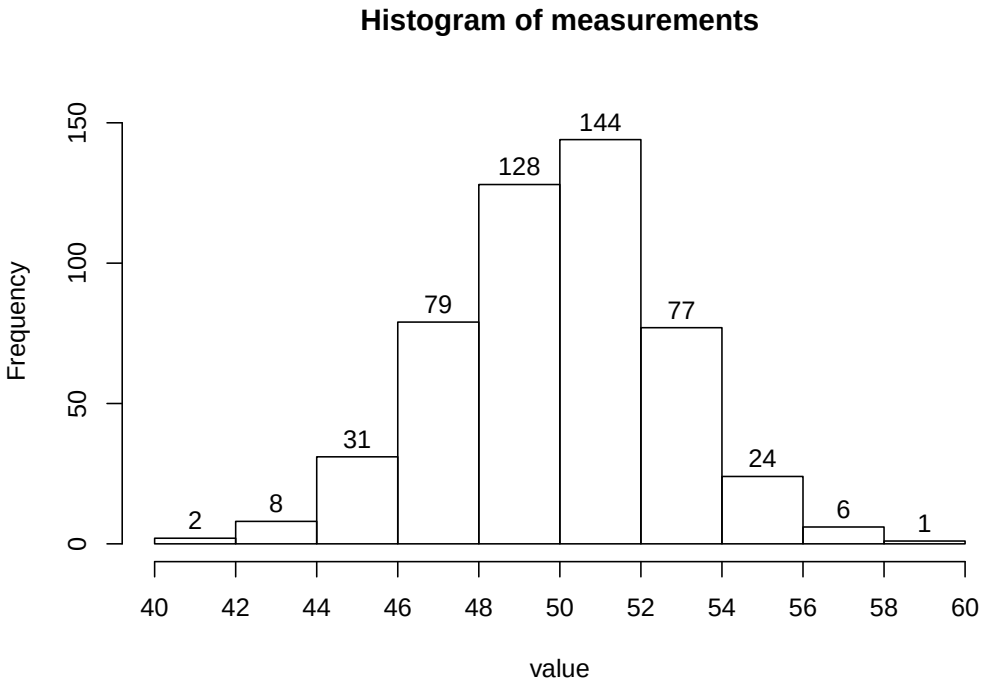
(c) 76.5%

(d) 53%

(e) 69.28%

(f) 60

1. **Problem**
   A continuous random variable was measured 500 times. The histogram is shown below.

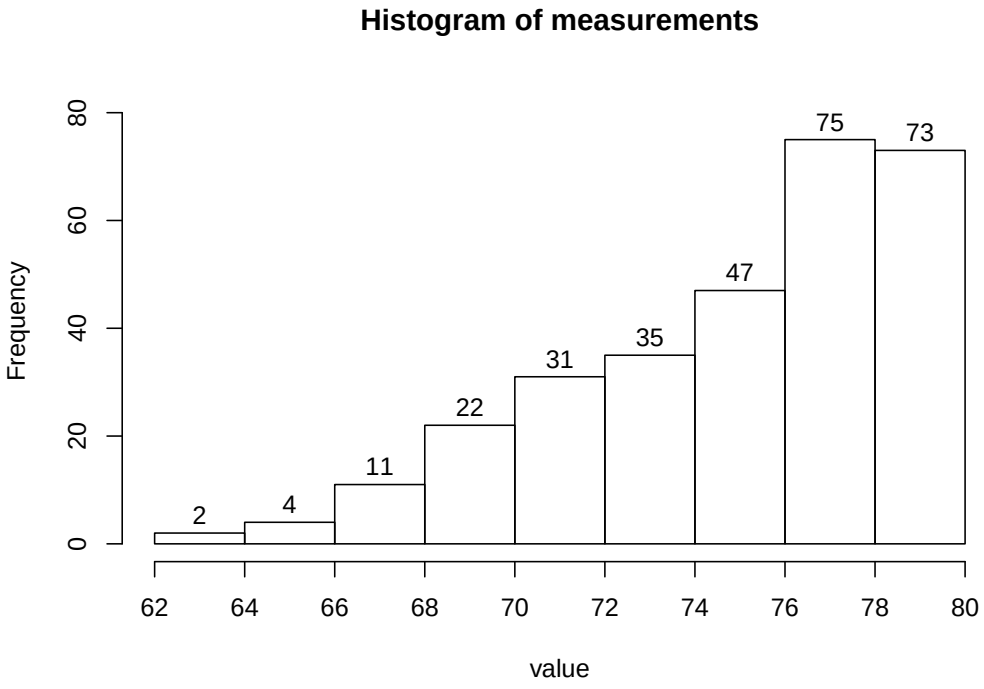


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 46?
   (d) What percent of the measurements are less than 50?
   (e) Of the measurements greater than 46, what percent are less than 50?
   (f) Estimate the value of the 93.8th percentile.

Solution

   (a) symmetric mound
   (b) 20
   (c) 91.8%
   (d) 49.6%
   (e) 45.1%
   (f) 54

2. **Problem**
A continuous random variable was measured 300 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 70?

(d) What percent of the measurements are less than 78?

(e) Of the measurements greater than 70, what percent are less than 78?

(f) Estimate the value of the 5.667th percentile.

Solution

(a) skew left

(b) 18

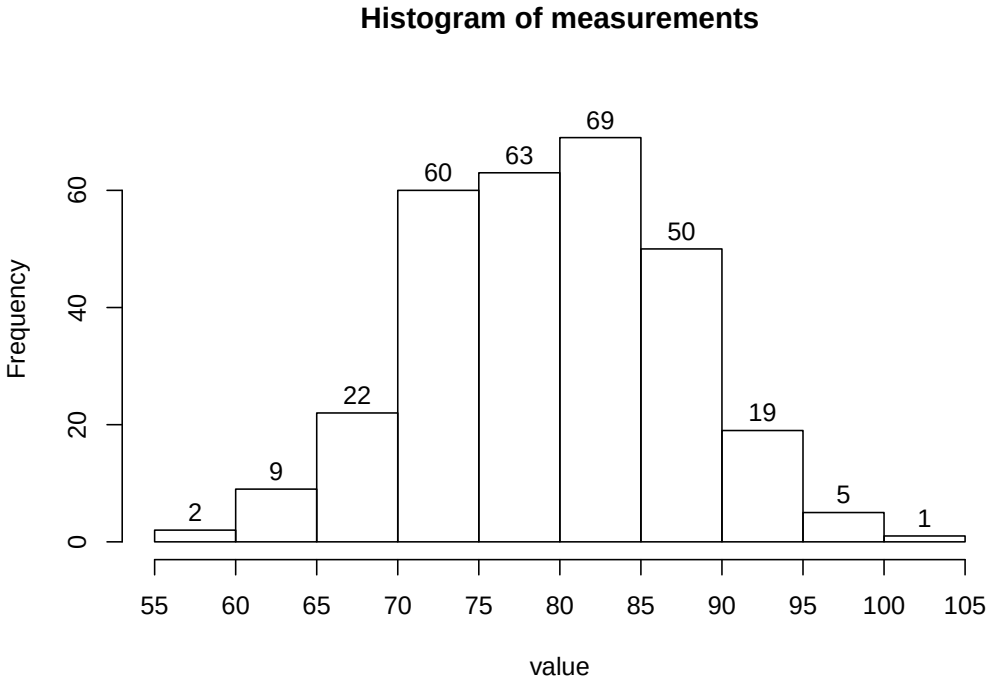
(c) 87%

(d) 75.67%

(e) 72.03%

(f) 68

1. **Problem**
   A continuous random variable was measured 300 times. The histogram is shown below.

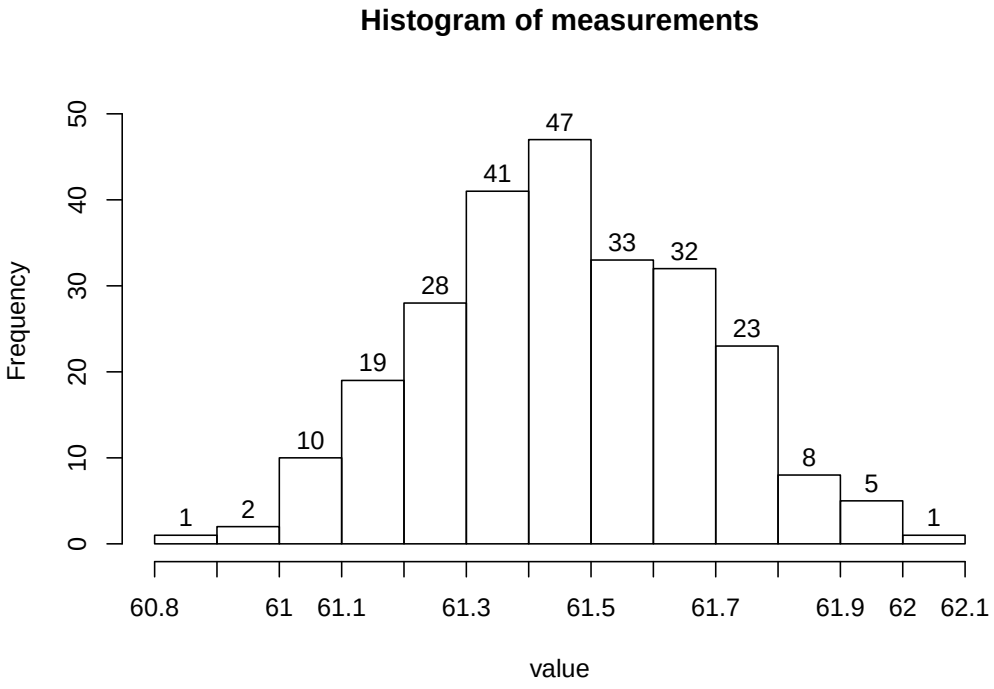


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 80?
   (d) What percent of the measurements are less than 100?
   (e) Of the measurements greater than 80, what percent are less than 100?
   (f) Estimate the value of the 75th percentile.

Solution

   (a) symmetric mound
   (b) 50
   (c) 48%
   (d) 99.67%
   (e) 99.31%
   (f) 85

2. **Problem**
A continuous random variable was measured 250 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 61.7?

(d) What percent of the measurements are less than 61.8?

(e) Of the measurements greater than 61.7, what percent are less than 61.8?

(f) Estimate the value of the 0.4th percentile.

Solution

(a) symmetric mound

(b) 1.3

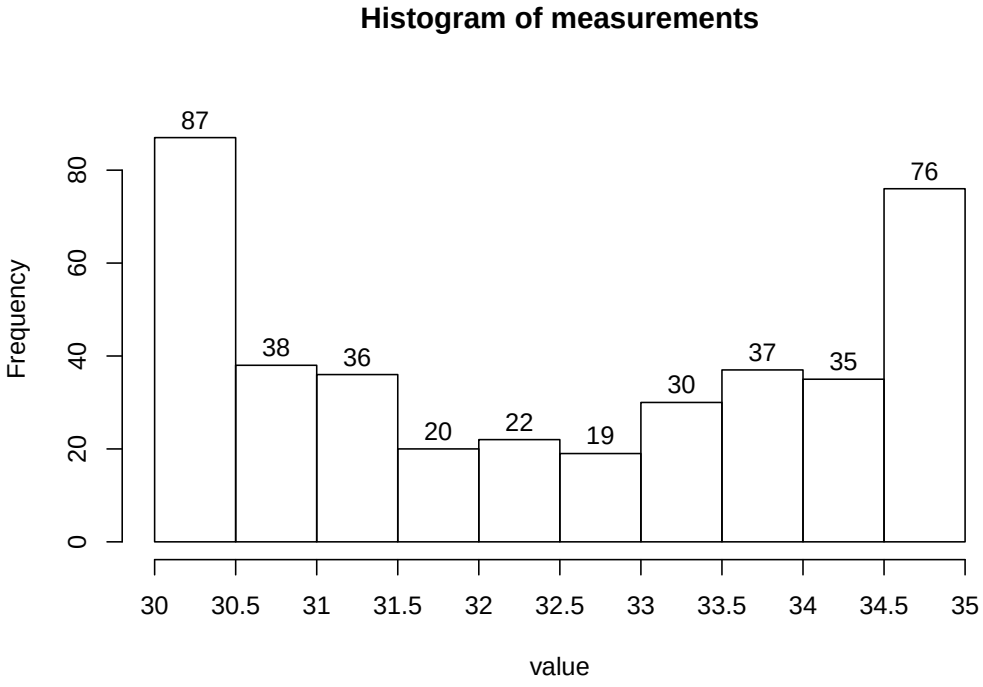
(c) 14.8%

(d) 94.4%

(e) 62.16%

(f) 60.9

1. **Problem**
   A continuous random variable was measured 400 times. The histogram is shown below.

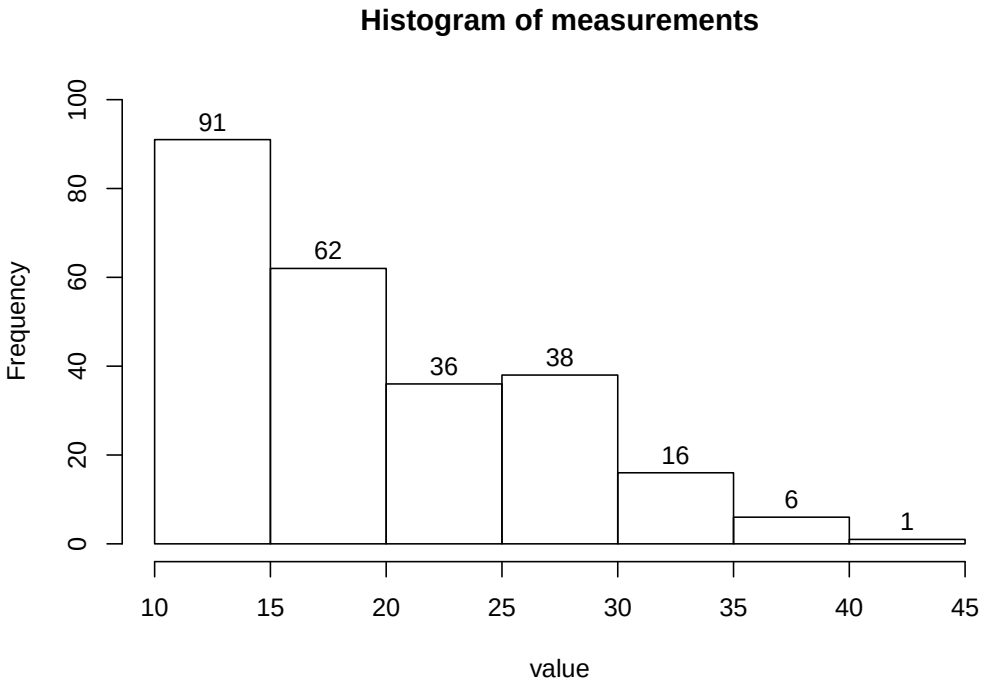


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 31?
   (d) What percent of the measurements are greater than 33.5?
   (e) Of the measurements greater than 31, what percent are greater than 33.5?
   (f) Estimate the value of the 40.25th percentile.

Solution

   (a) bimodal
   (b) 5
   (c) 68.75%
   (d) 37%
   (e) 53.82%
   (f) 31.5

2. **Problem**
A continuous random variable was measured 250 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 20?

(d) What percent of the measurements are greater than 35?

(e) Of the measurements greater than 20, what percent are greater than 35?

(f) Estimate the value of the 36.4th percentile.

Solution

(a) skew right

(b) 35

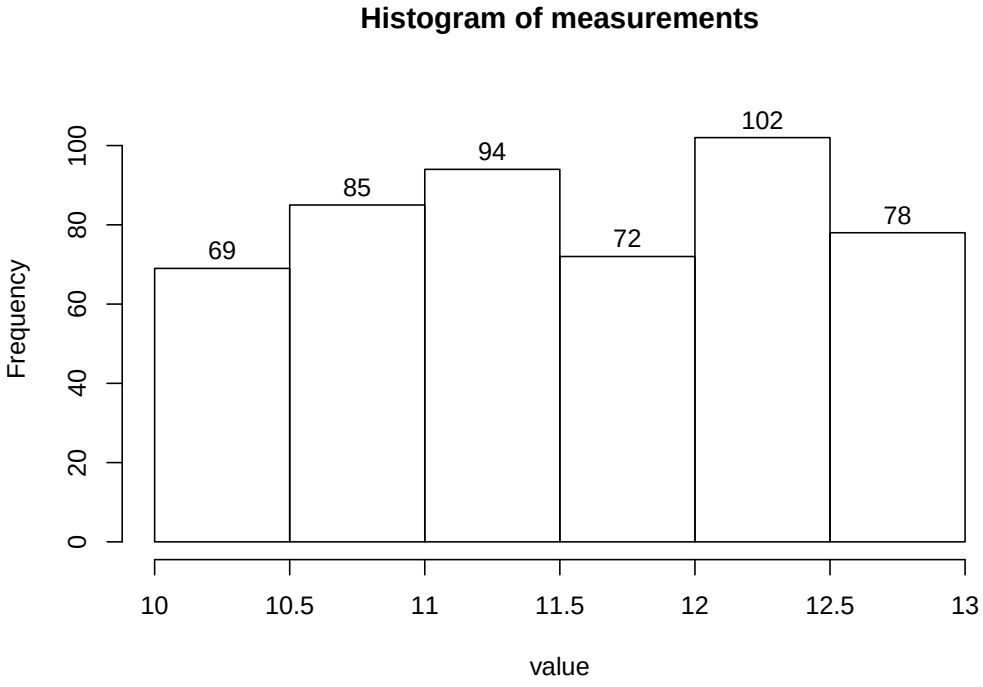
(c) 38.8%

(d) 2.8%

(e) 7.216%

(f) 15

1. **Problem**
   A continuous random variable was measured 500 times. The histogram is shown below.

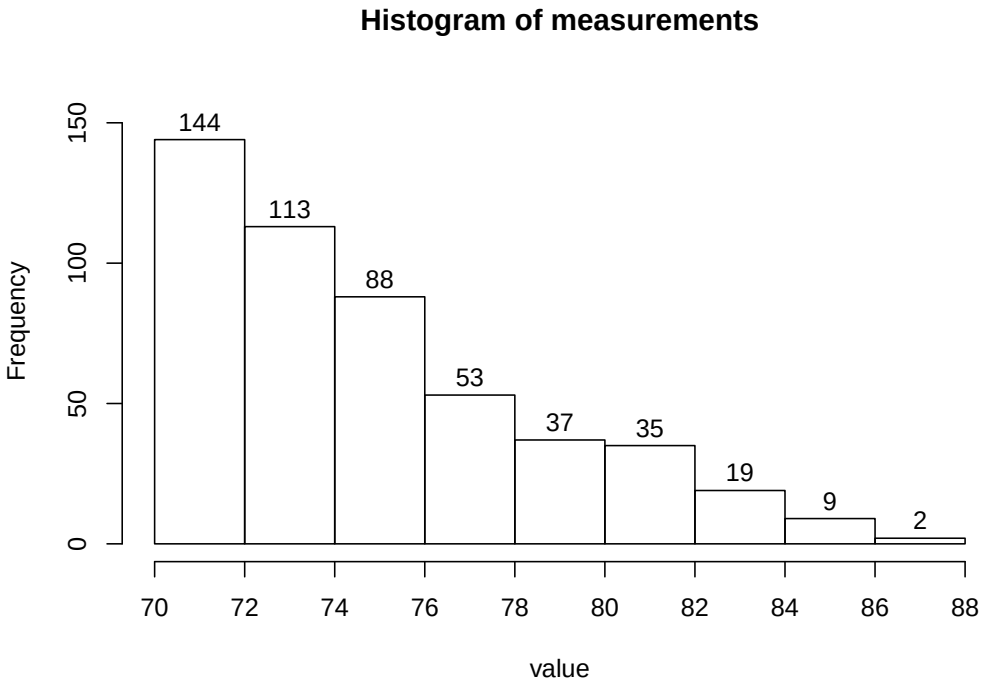


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 11.5?
   (d) What percent of the measurements are less than 12.5?
   (e) Of the measurements greater than 11.5, what percent are less than 12.5?
   (f) Estimate the value of the 64th percentile.

Solution

   (a) uniform
   (b) 3
   (c) 50.4%
   (d) 84.4%
   (e) 69.05%
   (f) 12

2. **Problem**
A continuous random variable was measured 500 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are less than 74?

(d) What percent of the measurements are greater than 70?

(e) Of the measurements less than 74, what percent are greater than 70?

(f) Estimate the value of the 69th percentile.

Solution

(a) skew right

(b) 18

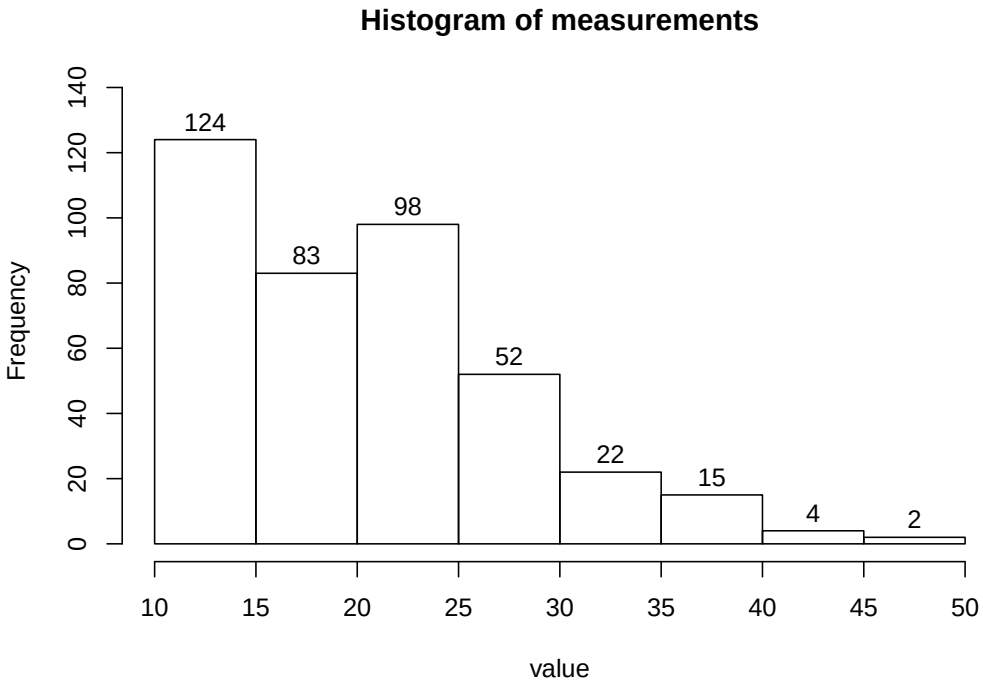
(c) 51.4%

(d) 100%

(e) 100%

(f) 76

1. **Problem**
   A continuous random variable was measured 400 times. The histogram is shown below.

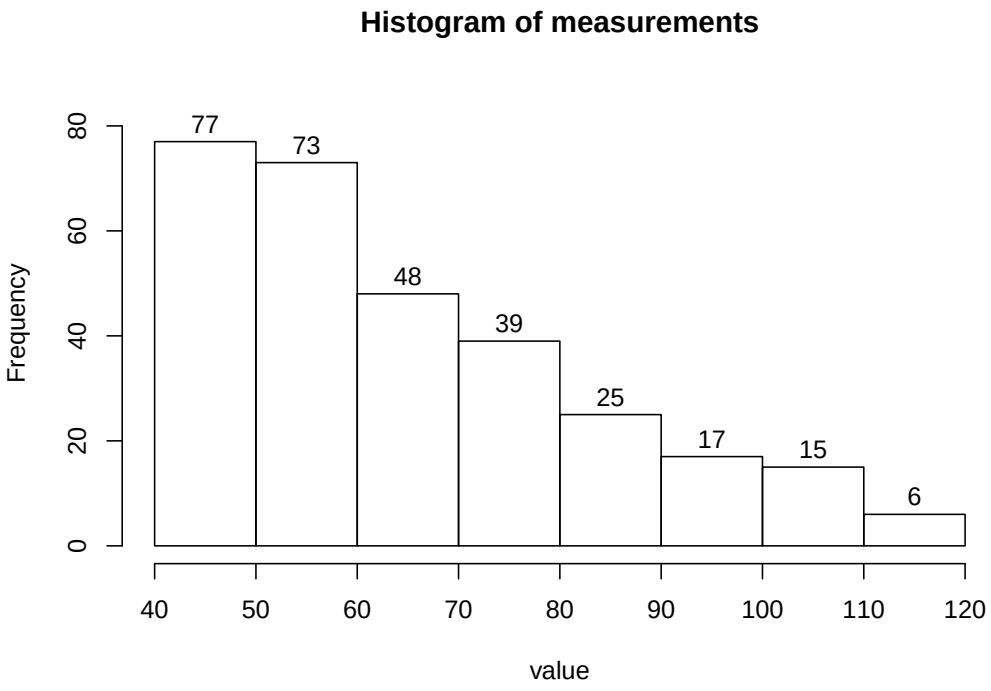


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 35?
   (d) What percent of the measurements are greater than 45?
   (e) Of the measurements greater than 35, what percent are greater than 45?
   (f) Estimate the value of the 98.5th percentile.

Solution

   (a) skew right
   (b) 40
   (c) 5.25%
   (d) 0.5%
   (e) 9.524%
   (f) 40

2. **Problem**
A continuous random variable was measured 300 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 80?

(d) What percent of the measurements are greater than 100?

(e) Of the measurements greater than 80, what percent are greater than 100?

(f) Estimate the value of the 50th percentile.

Solution

(a) skew right

(b) 80

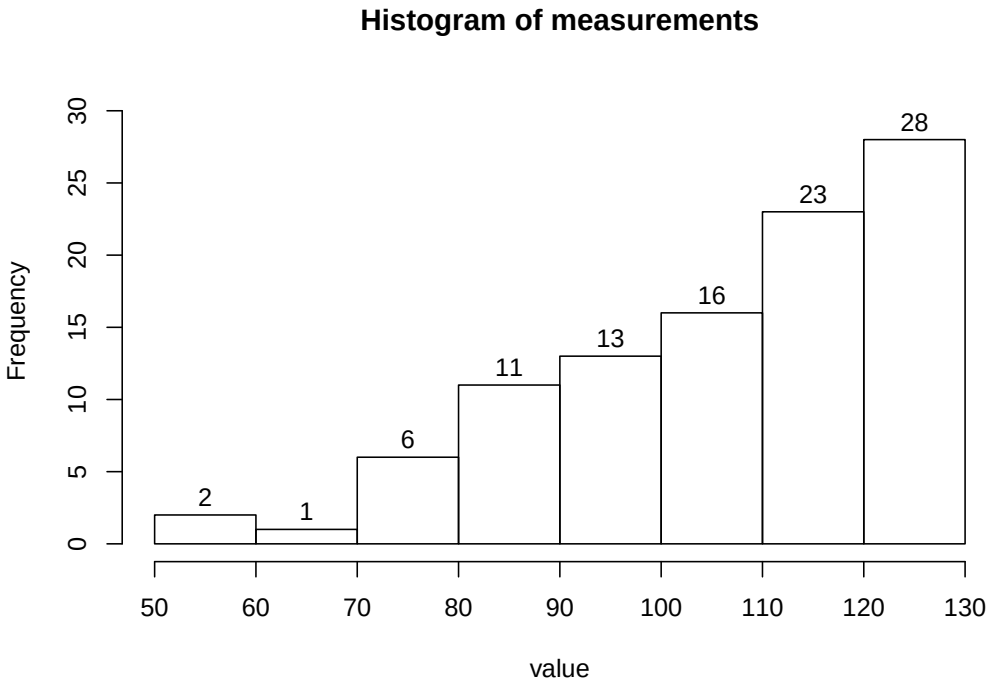
(c) 21%

(d) 7%

(e) 33.33%

(f) 60

1. **Problem**
   A continuous random variable was measured 100 times. The histogram is shown below.

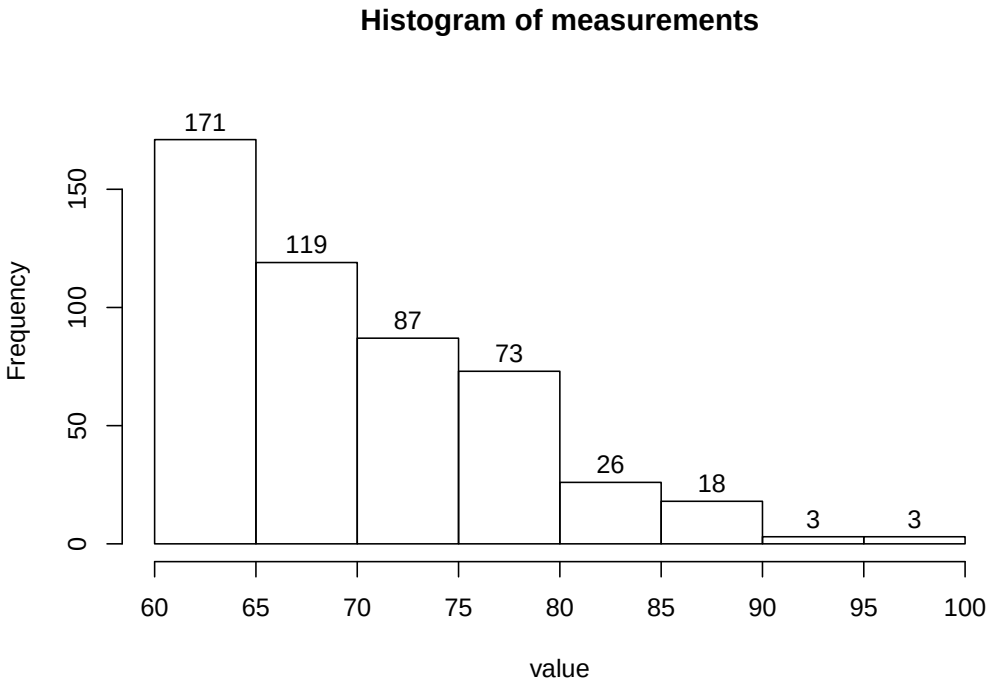


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are greater than 70?
   (d) What percent of the measurements are less than 90?
   (e) Of the measurements greater than 70, what percent are less than 90?
   (f) Estimate the value of the 49th percentile.

Solution

   (a) skew left
   (b) 80
   (c) 97%
   (d) 20%
   (e) 17.53%
   (f) 110

2. **Problem**
A continuous random variable was measured 500 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are less than 70?

(d) What percent of the measurements are greater than 65?

(e) Of the measurements less than 70, what percent are greater than 65?

(f) Estimate the value of the 95.2th percentile.

Solution

(a) skew right

(b) 40

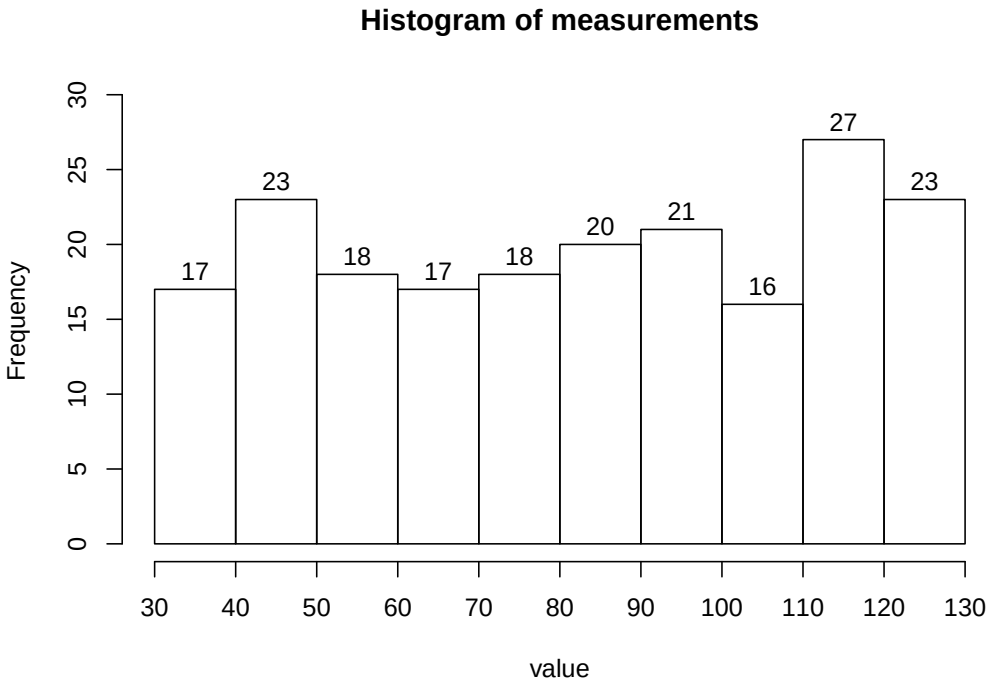
(c) 58%

(d) 65.8%

(e) 41.03%

(f) 85

1. **Problem**
   A continuous random variable was measured 200 times. The histogram is shown below.

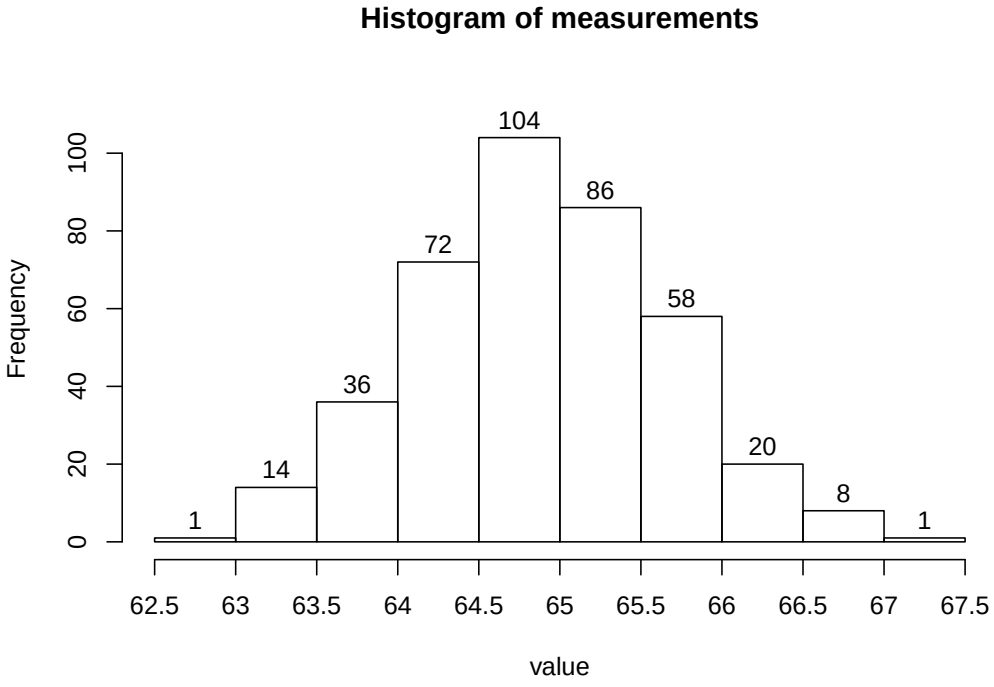


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are less than 60?
   (d) What percent of the measurements are greater than 40?
   (e) Of the measurements less than 60, what percent are greater than 40?
   (f) Estimate the value of the 20th percentile.

Solution

   (a) uniform
   (b) 100
   (c) 29%
   (d) 91.5%
   (e) 70.69%
   (f) 50

2. **Problem**
A continuous random variable was measured 400 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 66?

(d) What percent of the measurements are greater than 66.5?

(e) Of the measurements greater than 66, what percent are greater than 66.5?

(f) Estimate the value of the 0.25th percentile.

Solution

(a) symmetric mound

(b) 5

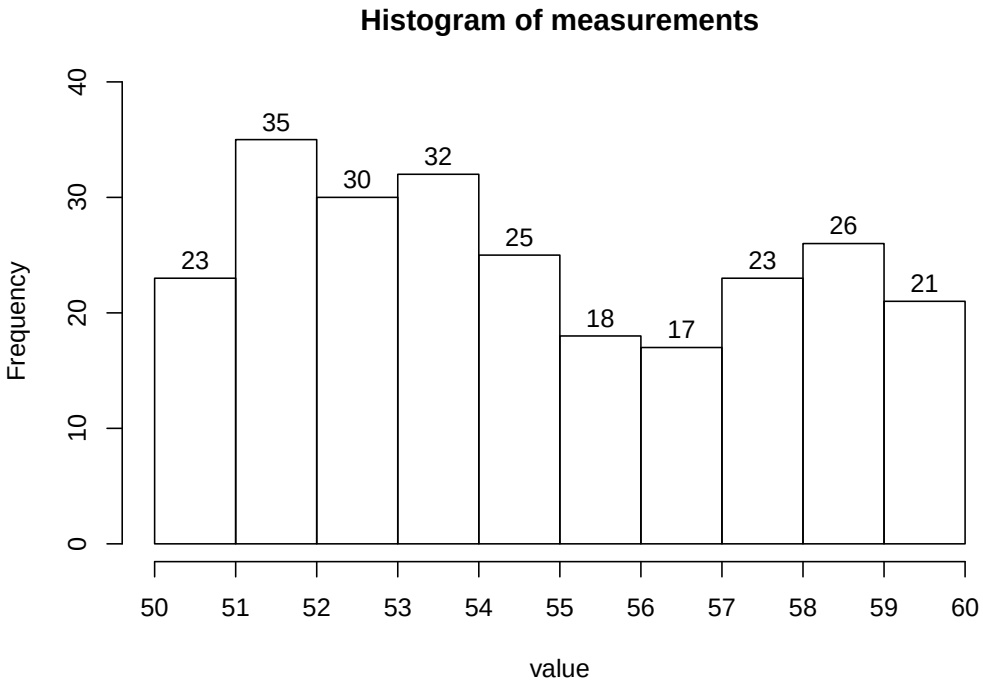
(c) 7.25%

(d) 2.25%

(e) 31.03%

(f) 63

1. **Problem**
   A continuous random variable was measured 250 times. The histogram is shown below.

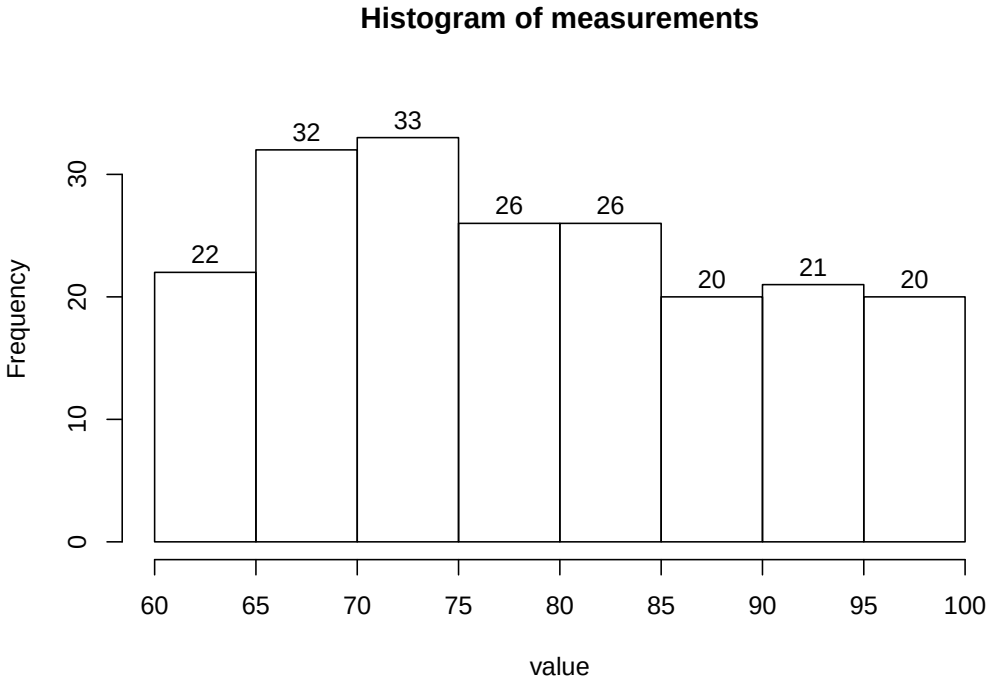


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are less than 52?
   (d) What percent of the measurements are less than 50?
   (e) Of the measurements less than 52, what percent are less than 50?
   (f) Estimate the value of the 48th percentile.

Solution

   (a) uniform
   (b) 10
   (c) 23.2%
   (d) 9.2%
   (e) 39.66%
   (f) 54

2. **Problem**
A continuous random variable was measured 200 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are less than 85?

(d) What percent of the measurements are less than 80?

(e) Of the measurements less than 85, what percent are less than 80?

(f) Estimate the value of the 11th percentile.

Solution

(a) uniform

(b) 40

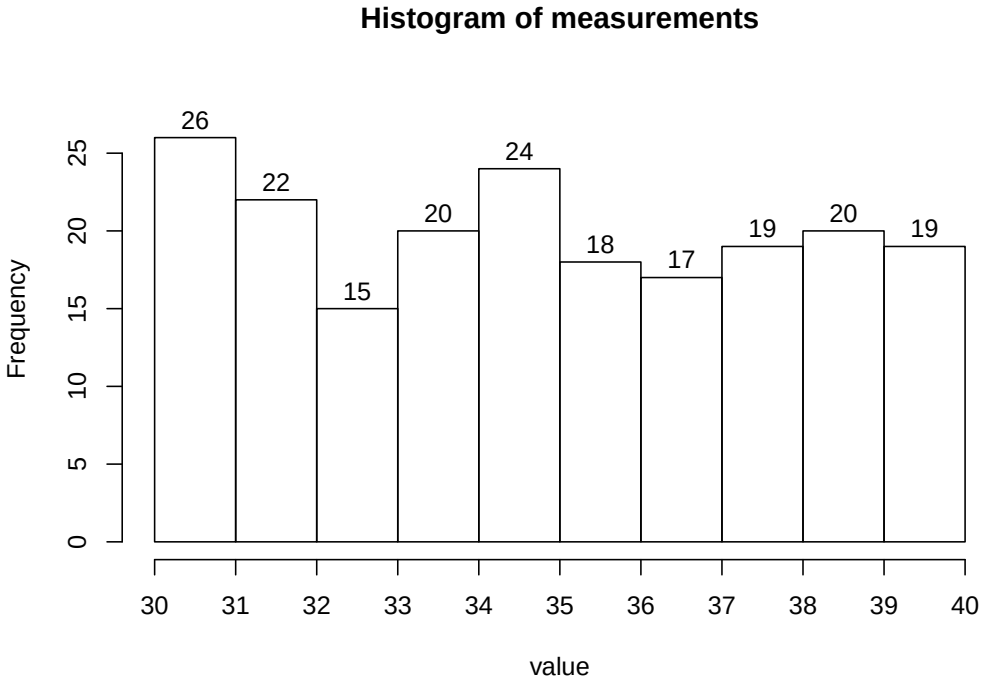
(c) 69.5%

(d) 56.5%

(e) 81.29%

(f) 65

1. **Problem**
   A continuous random variable was measured 200 times. The histogram is shown below.

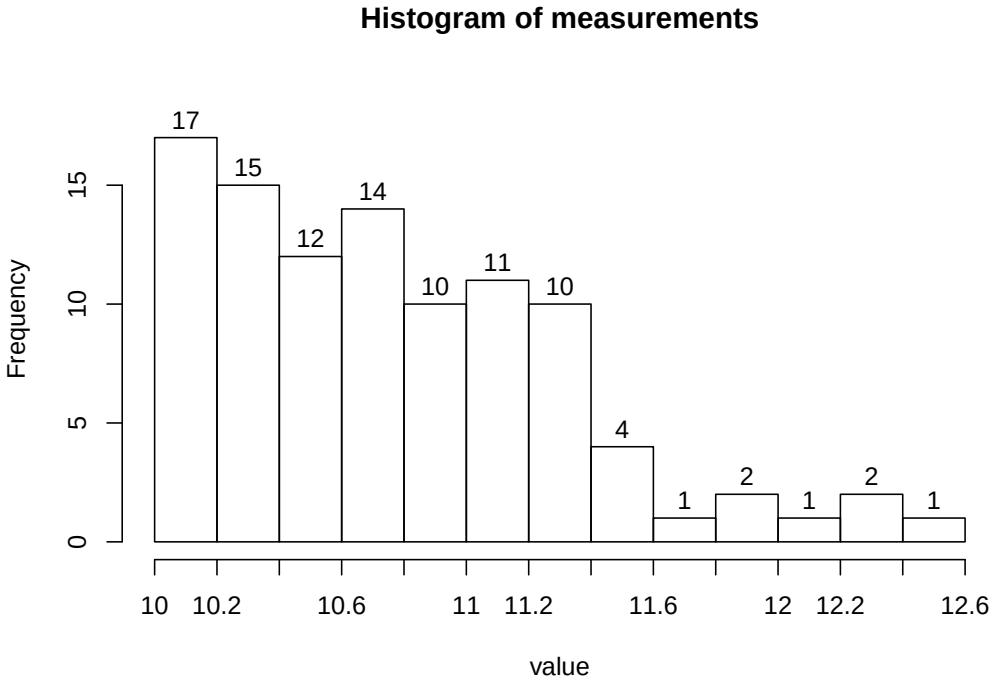


   (a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)
   (b) Estimate the range of the distribution (range = max-min).
   (c) What percent of the measurements are less than 33?
   (d) What percent of the measurements are greater than 32?
   (e) Of the measurements less than 33, what percent are greater than 32?
   (f) Estimate the value of the 62.5th percentile.

Solution

   (a) uniform
   (b) 10
   (c) 31.5%
   (d) 76%
   (e) 23.81%
   (f) 36

2. **Problem**
A continuous random variable was measured 100 times. The histogram is shown below.



(a) Describe the overall shape of the distribution. (symmetric mound, skew left, skew right, uniform, or bimodal)

(b) Estimate the range of the distribution (range = max-min).

(c) What percent of the measurements are greater than 11.4?

(d) What percent of the measurements are greater than 11.6?

(e) Of the measurements greater than 11.4, what percent are greater than 11.6?

(f) Estimate the value of the 79th percentile.

Solution

(a) skew right

(b) 2.6

(c) 11%

(d) 7%

(e) 63.64%

(f) 11.2