1. **Problem**
   A continuous random variable X was measured 11 times. The sorted data are shown below, along with each datum's index.

i	x
1	40.041
2	40.437
3	40.535
4	40.771
5	42.226
6	42.309
7	42.645
8	43.672
9	43.943
10	46.308
11	46.787

   The total of the measurements is 469.674.

   (a) Determine the percentile rank of the value 40.535. In other words, determine what percent of data are less than or equal to 40.535.

   (b) Determine the datum corresponding to a percentile rank of 0.182. In other words, determine x such that 18.2% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
   A continuous random variable X was measured 30 times. The sorted data are shown below.

81.411	82.159	85.456	86.454	89.182	89.946	90.259	90.313	93.914	94.991
95.627	96.198	97.918	102.389	103.694	105.265	105.305	105.364	105.885	107.940
110.951	111.941	112.408	112.634	113.227	114.477	118.038	118.826	119.024	119.549

   The total of the measurements is 3060.745.

   (a) Determine the percentile rank of the value 96.198. In other words, determine what percent of data are less than or equal to 96.198.

   (b) Determine the datum corresponding to a percentile rank of 0.0667. In other words, determine x such that 6.67% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 8 times. The sorted data are shown below, along with each datum's index.

i	x
1	20.202
2	20.239
3	23.368
4	24.707
5	26.576
6	28.176
7	31.021
8	31.454

   The total of the measurements is 205.743.

   (a) Determine the percentile rank of the value 24.707. In other words, determine what percent of data are less than or equal to 24.707.

   (b) Determine the datum corresponding to a percentile rank of 0.25. In other words, determine x such that 25% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 40 times. The sorted data are shown below.

40.264	40.386	40.480	40.722	40.802	41.082	41.084	41.696
42.609	42.740	42.743	43.087	43.883	44.634	46.152	47.894
48.950	49.132	49.159	49.535	49.918	51.254	52.741	53.716
53.919	54.878	55.505	56.448	56.485	57.997	58.096	58.174
58.671	59.022	59.261	59.480	59.672	59.727	59.774	59.799

The total of the measurements is 2011.571.

(a) Determine the percentile rank of the value 41.084. In other words, determine what percent of data are less than or equal to 41.084.

(b) Determine the datum corresponding to a percentile rank of 0.75. In other words, determine x such that 75% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 8 times. The sorted data are shown below, along with each datum's index.

i	x
1	41.172
2	42.342
3	45.359
4	45.662
5	47.342
6	49.368
7	49.697
8	49.787

   The total of the measurements is 370.729.

   (a) Determine the percentile rank of the value 49.368. In other words, determine what percent of data are less than or equal to 49.368.

   (b) Determine the datum corresponding to a percentile rank of 0.25. In other words, determine x such that 25% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 72 times. The sorted data are shown below.

60.001	60.002	60.006	60.027	60.062	60.108	60.257	60.279	60.498
60.576	60.902	61.262	61.378	61.541	61.760	61.966	62.792	63.270
64.093	64.576	66.407	66.494	66.635	67.208	67.696	67.926	68.041
68.515	68.567	69.097	69.107	69.451	69.669	70.027	70.359	70.836
70.881	71.028	71.432	71.525	71.540	71.804	72.102	72.610	72.639
72.876	73.857	73.921	74.030	74.543	75.054	75.594	75.908	76.231
76.533	76.571	76.733	77.160	77.170	77.181	77.584	77.638	78.275
78.717	79.013	79.021	79.362	79.563	79.649	79.707	79.749	79.801

The total of the measurements is 5048.393.

(a) Determine the percentile rank of the value 73.921. In other words, determine what percent of data are less than or equal to 73.921.

(b) Determine the datum corresponding to a percentile rank of 0.0417. In other words, determine x such that 4.17% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 9 times. The sorted data are shown below, along with each datum's index.

i	x
1	68.753
2	69.748
3	69.955
4	70.082
5	70.104
6	70.403
7	70.534
8	71.090
9	72.673

   The total of the measurements is 633.342.

   (a) Determine the percentile rank of the value 70.104. In other words, determine what percent of data are less than or equal to 70.104.

   (b) Determine the datum corresponding to a percentile rank of 0.444. In other words, determine x such that 44.4% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 32 times. The sorted data are shown below.

85.556	86.645	87.115	87.407	87.478	87.626	87.776	88.230
88.270	88.479	88.648	89.187	89.349	89.449	89.693	89.889
90.105	90.259	90.802	90.811	90.817	90.990	91.117	91.584
91.677	91.858	91.967	92.408	93.219	93.510	93.639	100.374

The total of the measurements is 2885.934.

(a) Determine the percentile rank of the value 90.811. In other words, determine what percent of data are less than or equal to 90.811.

(b) Determine the datum corresponding to a percentile rank of 0.875. In other words, determine x such that 87.5% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 11 times. The sorted data are shown below, along with each datum's index.

i	x
1	90.158
2	90.283
3	90.557
4	90.716
5	90.922
6	91.151
7	91.674
8	92.074
9	92.666
10	93.686
11	93.691

   The total of the measurements is 1007.578.

   (a) Determine the percentile rank of the value 90.922. In other words, determine what percent of data are less than or equal to 90.922.

   (b) Determine the datum corresponding to a percentile rank of 0.727. In other words, determine x such that 72.7% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 24 times. The sorted data are shown below.

96.087	110.416	111.079	111.606	112.398	115.062
115.390	116.032	116.808	116.975	117.021	117.730
118.073	119.807	120.276	120.367	122.955	123.584
123.976	124.691	127.086	128.880	132.341	132.432

The total of the measurements is 2851.072.

(a) Determine the percentile rank of the value 117.021. In other words, determine what percent of data are less than or equal to 117.021.

(b) Determine the datum corresponding to a percentile rank of 0.125. In other words, determine x such that 12.5% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 12 times. The sorted data are shown below, along with each datum's index.

i	x
1	40.381
2	40.489
3	40.577
4	40.622
5	41.024
6	41.150
7	42.485
8	42.530
9	42.858
10	42.936
11	44.332
12	44.861

   The total of the measurements is 504.245.

   (a) Determine the percentile rank of the value 41.15. In other words, determine what percent of data are less than or equal to 41.15.

   (b) Determine the datum corresponding to a percentile rank of 0.667. In other words, determine x such that 66.7% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 24 times. The sorted data are shown below.

70.299	70.481	71.095	71.306	71.867	72.034	73.926	74.239
74.250	74.605	76.036	76.938	77.888	78.238	78.409	79.247
81.702	83.980	87.865	90.328	90.661	99.888	104.037	105.122

The total of the measurements is 1934.441.

(a) Determine the percentile rank of the value 76.036. In other words, determine what percent of data are less than or equal to 76.036.

(b) Determine the datum corresponding to a percentile rank of 0.875. In other words, determine x such that 87.5% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 12 times. The sorted data are shown below, along with each datum's index.

i	x
1	90.019
2	90.391
3	90.464
4	90.504
5	90.563
6	90.622
7	91.362
8	91.408
9	91.598
10	93.789
11	94.194
12	94.930

   The total of the measurements is 1099.844.

   (a) Determine the percentile rank of the value 90.622. In other words, determine what percent of data are less than or equal to 90.622.

   (b) Determine the datum corresponding to a percentile rank of 0.167. In other words, determine x such that 16.7% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 12 times. The sorted data are shown below.

20.417	20.561	20.601	20.900
21.105	22.179	23.152	23.364
24.773	26.642	27.260	28.384

The total of the measurements is 279.338.

(a) Determine the percentile rank of the value 20.601. In other words, determine what percent of data are less than or equal to 20.601.

(b) Determine the datum corresponding to a percentile rank of 0.75. In other words, determine x such that 75% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 10 times. The sorted data are shown below, along with each datum's index.

i	x
1	20.562
2	21.483
3	21.990
4	22.319
5	22.351
6	22.352
7	22.431
8	22.536
9	22.755
10	22.824

   The total of the measurements is 221.603.

   (a) Determine the percentile rank of the value 22.755. In other words, determine what percent of data are less than or equal to 22.755.

   (b) Determine the datum corresponding to a percentile rank of 0.3. In other words, determine x such that 30% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 16 times. The sorted data are shown below.

54.202	58.404	78.259	80.063
80.594	82.722	87.032	95.188
106.464	108.125	110.410	114.455
120.004	130.895	133.070	145.615

The total of the measurements is 1585.502.

(a) Determine the percentile rank of the value 82.722. In other words, determine what percent of data are less than or equal to 82.722.

(b) Determine the datum corresponding to a percentile rank of 0.125. In other words, determine x such that 12.5% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 6 times. The sorted data are shown below, along with each datum's index.

i	x
1	101.077
2	135.576
3	163.935
4	164.260
5	176.255
6	177.575

   The total of the measurements is 918.678.

   (a) Determine the percentile rank of the value 177.575. In other words, determine what percent of data are less than or equal to 177.575.

   (b) Determine the datum corresponding to a percentile rank of 0.667. In other words, determine x such that 66.7% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 28 times. The sorted data are shown below.

71.705	72.298	72.352	72.594	72.729	72.735	72.787
72.848	73.209	73.214	73.224	73.257	73.544	73.719
73.817	74.020	74.039	74.112	74.311	74.328	74.361
74.533	74.563	74.608	74.652	74.791	74.793	74.901

The total of the measurements is 2062.044.

(a) Determine the percentile rank of the value 72.729. In other words, determine what percent of data are less than or equal to 72.729.

(b) Determine the datum corresponding to a percentile rank of 0.536. In other words, determine x such that 53.6% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 8 times. The sorted data are shown below, along with each datum's index.

i	x
1	52.007
2	54.473
3	57.014
4	57.544
5	58.937
6	60.769
7	61.008
8	111.271

   The total of the measurements is 513.023.

   (a) Determine the percentile rank of the value 60.769. In other words, determine what percent of data are less than or equal to 60.769.

   (b) Determine the datum corresponding to a percentile rank of 0.875. In other words, determine x such that 87.5% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 48 times. The sorted data are shown below.

90.044	90.056	90.061	90.062	90.068	90.076	90.082	90.111
90.140	90.335	90.364	90.456	90.480	90.492	90.504	90.558
90.594	90.666	90.739	90.760	90.775	90.830	90.841	90.858
90.867	90.896	90.938	90.945	90.964	91.044	91.048	91.054
91.067	91.175	91.242	91.264	91.408	91.455	91.459	91.612
91.681	91.767	91.994	92.157	92.736	92.836	93.273	93.276

The total of the measurements is 4368.11.

(a) Determine the percentile rank of the value 91.455. In other words, determine what percent of data are less than or equal to 91.455.

(b) Determine the datum corresponding to a percentile rank of 0.333. In other words, determine x such that 33.3% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 9 times. The sorted data are shown below, along with each datum's index.

i	x
1	10.336
2	10.528
3	10.947
4	12.027
5	14.162
6	14.225
7	17.302
8	23.133
9	30.812

   The total of the measurements is 143.472.

   (a) Determine the percentile rank of the value 23.133. In other words, determine what percent of data are less than or equal to 23.133.

   (b) Determine the datum corresponding to a percentile rank of 0.667. In other words, determine x such that 66.7% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 32 times. The sorted data are shown below.

21.257	21.569	22.111	22.461	22.506	24.022	24.226	24.902
25.254	25.847	26.564	26.595	27.132	27.868	28.368	28.402
30.474	31.570	32.498	32.788	33.421	33.593	33.811	33.969
34.244	36.219	36.439	36.866	37.012	37.775	37.958	38.411

The total of the measurements is 956.132.

(a) Determine the percentile rank of the value 33.969. In other words, determine what percent of data are less than or equal to 33.969.

(b) Determine the datum corresponding to a percentile rank of 0.438. In other words, determine x such that 43.8% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 9 times. The sorted data are shown below, along with each datum's index.

i	x
1	34.057
2	34.267
3	34.846
4	35.966
5	37.428
6	38.548
7	40.399
8	44.588
9	51.692

   The total of the measurements is 351.791.

   (a) Determine the percentile rank of the value 51.692. In other words, determine what percent of data are less than or equal to 51.692.

   (b) Determine the datum corresponding to a percentile rank of 0.222. In other words, determine x such that 22.2% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
   A continuous random variable X was measured 70 times. The sorted data are shown below.

10.039	10.101	10.501	10.657	10.749	10.830	11.004	11.027	11.099	11.288
11.431	11.503	11.563	11.648	11.706	11.773	11.804	12.042	12.548	12.719
12.950	12.962	12.965	12.977	13.354	13.727	13.762	13.960	14.104	14.113
14.128	14.521	14.583	14.656	14.717	14.750	14.914	14.943	14.954	15.199
15.418	15.612	15.654	16.287	16.442	16.477	16.954	16.957	17.283	17.483
17.778	17.950	18.025	18.096	18.354	18.476	18.902	19.360	19.556	19.690
20.428	20.883	21.041	21.510	22.742	23.065	23.878	24.185	24.451	25.675

   The total of the measurements is 1086.883.

   (a) Determine the percentile rank of the value 11.431. In other words, determine what percent of data are less than or equal to 11.431.

   (b) Determine the datum corresponding to a percentile rank of 0.214. In other words, determine x such that 21.4% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 8 times. The sorted data are shown below, along with each datum's index.

i	x
1	53.916
2	54.699
3	57.595
4	63.148
5	67.500
6	67.750
7	68.077
8	69.795

   The total of the measurements is 502.48.

   (a) Determine the percentile rank of the value 69.795. In other words, determine what percent of data are less than or equal to 69.795.

   (b) Determine the datum corresponding to a percentile rank of 0.25. In other words, determine x such that 25% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 64 times. The sorted data are shown below.

22.993	25.353	26.983	27.094	27.461	27.957	28.681	29.009
29.483	30.156	30.300	31.347	31.449	31.481	31.674	31.708
31.796	31.821	31.917	32.476	33.243	33.497	33.509	33.562
33.650	33.659	34.648	34.680	34.743	35.211	35.304	35.453
35.590	35.618	35.633	35.846	36.095	36.188	36.509	36.932
36.958	37.164	37.204	37.279	37.527	37.582	37.682	37.773
38.031	38.079	38.390	38.428	38.857	38.895	38.931	38.978
39.079	39.196	39.253	39.395	39.419	39.440	39.450	39.515

The total of the measurements is 2213.214.

(a) Determine the percentile rank of the value 38.895. In other words, determine what percent of data are less than or equal to 38.895.

(b) Determine the datum corresponding to a percentile rank of 0.766. In other words, determine x such that 76.6% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 10 times. The sorted data are shown below, along with each datum's index.

i	x
1	70.005
2	70.167
3	70.762
4	73.005
5	77.524
6	83.296
7	87.540
8	89.353
9	89.457
10	89.548

   The total of the measurements is 800.657.

   (a) Determine the percentile rank of the value 73.005. In other words, determine what percent of data are less than or equal to 73.005.

   (b) Determine the datum corresponding to a percentile rank of 1. In other words, determine x such that 100% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 35 times. The sorted data are shown below.

80.001	80.001	80.017	80.060	80.074	80.131	80.406
80.413	80.464	80.803	80.883	80.895	80.936	81.007
81.143	81.298	81.566	81.622	81.622	81.671	81.691
82.077	82.146	82.277	82.346	82.396	82.576	82.648
82.710	82.719	82.888	82.911	82.929	82.958	82.963

The total of the measurements is 2853.248.

(a) Determine the percentile rank of the value 81.691. In other words, determine what percent of data are less than or equal to 81.691.

(b) Determine the datum corresponding to a percentile rank of 0.2. In other words, determine x such that 20% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 7 times. The sorted data are shown below, along with each datum's index.

i	x
1	85.624
2	86.061
3	86.561
4	86.982
5	87.234
6	88.292
7	89.741

   The total of the measurements is 610.495.

   (a) Determine the percentile rank of the value 86.061. In other words, determine what percent of data are less than or equal to 86.061.

   (b) Determine the datum corresponding to a percentile rank of 1. In other words, determine x such that 100% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 30 times. The sorted data are shown below.

60.018	60.368	61.617	63.668	64.224	65.175
65.244	66.886	67.989	71.044	71.444	71.869
73.758	75.315	75.745	80.630	80.733	82.309
83.870	84.065	84.757	84.771	87.597	91.736
92.350	96.539	97.085	105.795	125.944	147.718

The total of the measurements is 2440.263.

(a) Determine the percentile rank of the value 92.35. In other words, determine what percent of data are less than or equal to 92.35.

(b) Determine the datum corresponding to a percentile rank of 0.7. In other words, determine x such that 70% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.

1. **Problem**
   A continuous random variable X was measured 7 times. The sorted data are shown below, along with each datum's index.

i	x
1	70.052
2	73.549
3	74.854
4	76.600
5	78.862
6	79.440
7	79.900

   The total of the measurements is 533.257.

   (a) Determine the percentile rank of the value 73.549. In other words, determine what percent of data are less than or equal to 73.549.

   (b) Determine the datum corresponding to a percentile rank of 0.571. In other words, determine x such that 57.1% of the data are less than or equal to x.

   (c) Determine the mean of the measurements.

   (d) Determine the median of the measurements.

2. **Problem**
A continuous random variable X was measured 42 times. The sorted data are shown below.

80.959	80.974	81.090	81.091	81.209	81.301	81.306
81.324	81.341	81.361	81.385	81.391	81.404	81.434
81.446	81.464	81.467	81.470	81.481	81.492	81.518
81.527	81.532	81.534	81.560	81.570	81.602	81.604
81.609	81.615	81.652	81.653	81.672	81.705	81.737
81.739	81.755	81.779	81.785	81.799	81.921	81.990

The total of the measurements is 3423.248.

(a) Determine the percentile rank of the value 81.481. In other words, determine what percent of data are less than or equal to 81.481.

(b) Determine the datum corresponding to a percentile rank of 0.929. In other words, determine x such that 92.9% of the data are less than or equal to x.

(c) Determine the mean of the measurements.

(d) Determine the median of the measurements.