1. **Solution**
   Let x represent a datum of interest. Let i represent that datum's index. Let ℓ represent that datum's percentile. Let n represent the sample size (number of measurements). In general,

   $$\ell = \frac{i}{n}$$

   (a) We are given $x = 92.56$. This means $i = 2$. We know $n = 6$. Determine the percentile ℓ.

   $$\ell = \frac{2}{6}$$

   $$\ell = 0.333$$

   So, the percentile rank is $\boxed{0.333}$, or 33.3th percentile.

   (b) We are given $\ell = 1$. We can use algebra to solve for i.

   $$\ell = \frac{i}{n}$$

   Multiply both sides by n.

   $$n \cdot (\ell) = n \cdot \left(\frac{i}{n}\right)$$

   Simplify both sides.

   $$n\ell = i$$

   To make me happy, switch the sides.

   $$i = n\ell$$

   Now, we can evaluate i.

   $$i = (6)(1)$$
   $$i = 6$$

   Determine the x associated with $i = 6$.

   $$x = \boxed{99.254}$$

   (c) The mean: $\bar{x} = \frac{567.277}{6} = \boxed{94.546}$

   (d) If n is odd, then median is $x_{i=\frac{n+1}{2}}$, the value of x when $i = \frac{n+1}{2}$. Otherwise, if n is even, the median is mean of $x_{i=\frac{n}{2}}$ and $x_{i=\frac{n}{2}+1}$. In this case, $n = 6$ and so n is even.

   $$\text{median} = \frac{x_3 + x_4}{2} = \frac{94.195 + 94.23}{2}$$

   So, median = $\boxed{94.2125}$.

2. **Solution**

Let x represent a datum of interest. Let i represent that datum's index. Let ℓ represent that datum's percentile. Let n represent the sample size (number of measurements). In general,

$$\ell = \frac{i}{n}$$

(a) We are given $x = 48.787$. This means $i = 11$. We know $n = 36$. Determine the percentile ℓ.

$$\ell = \frac{11}{36}$$

$$\ell = 0.306$$

So, the percentile rank is $\boxed{0.306}$, or 30.6th percentile.

(b) We are given $\ell = 0.694$. We can use algebra to solve for i.

$$\ell = \frac{i}{n}$$

Multiply both sides by n.

$$n \cdot (\ell) = n \cdot \left(\frac{i}{n}\right)$$

Simplify both sides.

$$n\ell = i$$

To make me happy, switch the sides.

$$i = n\ell$$

Now, we can evaluate i.

$$i = (36)(0.694)$$

$$i = 25$$

Determine the x associated with $i = 25$.

$$x = \boxed{70.369}$$

(c) The mean: $\bar{x} = \frac{2141.341}{36} = \boxed{59.482}$

(d) If n is odd, then median is $x_{i=\frac{n+1}{2}}$, the value of x when $i = \frac{n+1}{2}$. Otherwise, if n is even, the median is mean of $x_{i=\frac{n}{2}}$ and $x_{i=\frac{n}{2}+1}$. In this case, $n = 36$ and so n is even.

$$\text{median} = \frac{x_{18} + x_{19}}{2} = \frac{62.632 + 62.762}{2}$$

So, median = $\boxed{62.697}$.