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 $x = 21.937$. This means $i = 3$. We know $n = 6$. Determine the percentile ℓ.

$$\ell = \frac{3}{6}$$

$$\ell = 0.5$$

   So, the answer is 0.5, or 50%.

   (b) We are given $\ell = 0.167$. 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.

$$i = (6)(0.167)$$

$$i = 1$$

   Determine the x associated with $i = 1$.

$$x = 20.953$$

   (c) The mean is $\frac{132.252}{6} = 22.042$

   (d) If n is odd, then median is $x_{\frac{n+1}{2}}$, the value of x when $i = \frac{n+1}{2}$. Otherwise median is mean of $x_{\lfloor \frac{n+1}{2} \rfloor}$ and $x_{\lceil \frac{n+1}{2} \rceil}$. So, median = 22.0775.

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 $x = 11.757$. This means $i = 5$. We know $n = 28$. Determine the percentile ℓ.

$$\ell = \frac{5}{28}$$

$$\ell = 0.179$$

So, the answer is 0.179, or 17.9%.

(b) We are given $\ell = 0.429$. 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.

$$i = (28)(0.429)$$

$$i = 12$$

Determine the x associated with $i = 12$.

$$x = 13.673$$

(c) The mean is $\frac{448.395}{28} = 16.014$

(d) If n is odd, then median is $x_{\frac{n+1}{2}}$, the value of x when $i = \frac{n+1}{2}$. Otherwise median is mean of $x_{\lfloor \frac{n+1}{2} \rfloor}$ and $x_{\lceil \frac{n+1}{2} \rceil}$. So, median = 15.009.