

**Example 4**

The following data are obtained from an experiment:

23 25 26 28 29 29 29 31 34 38 41 47

*scores below*

- a) Find the percentile rank for a score of 29.

Since there are 4 scores below 29,  $b = 4$

$$PR = \frac{b}{n} \times 100 \Rightarrow \frac{4}{12} \times 100 = 33.3$$

$= 34^{\text{th}}$  or  $P_{34}$

- b) Find the percentile rank for a score of 41.

$$PR = \frac{b}{n} \times 100 \quad b = 10$$

$$n = 12$$

$$PR = \frac{10}{12} \times 100 \Rightarrow 83.3 \Rightarrow 84^{\text{th}} \text{ or } P_{84}$$

**Example 5**

The Business School at the University of Maine grants entry interviews to students who score in the 90<sup>th</sup> percentile or better. Joanne gets a score of 93% on her Entrance Exam. Will she get an interview?

Explain.

A mark of 93% does not guarantee an interview, because we don't know her percentile rank. We need to know the scores of the other applicants to find out the percentile rank.

**Example 6**

At a local elementary school there are 50 students. The height of all of the students is measured for their records. Cynthia is one of the students. There are 4 students taller than Cynthia, and 5 students that are the same height as Cynthia. Calculate the percentile rank of Cynthia's height.

$$P.R. = \frac{b}{n} \times 100$$

$$n = 50$$

$$b = 50 - \text{Cynthia - same height} - \text{taller}$$

$$= 50 - 1 - 5 = 4$$

$$b = 40$$

$$PR = \frac{40}{50} \times 100$$

$$= 80$$

$P_{80}$  or 80<sup>th</sup> percentile.