

Percentile – Supplemental Questions with Solutions

1. You run a marathon, placing 211th out of 468 runners. What percentile is associated with position as you cross the finish line?

$$\text{percentile} = \frac{\# \text{ values lower} + \frac{\# \text{ values same}}{2}}{\text{total values}} \times 100 \quad \text{Round up!}$$

values lower 1 → 210, 211, 212 → 468
 higher lower
 257 people

$$\text{percentile} = \frac{257 + \frac{1}{2}}{468} \times 100 = 55.02 \rightarrow \text{Round up! } 56^{\text{th}}$$

2. Marissa works at a company with 520 employees and makes a salary of \$60000 per year. 284 employees make more money than she does. Seven employees make the same salary as Marissa. What is the percentile associated with Marissa's salary?

$$520 - 284 = 236 \text{ higher than Marissa}$$

$$7 = \text{same as Marissa}$$

$$520 - 236 - 7 = 277 \text{ lower than Marissa}$$

$$\begin{aligned} \text{percentile} &= \frac{277 + \frac{7}{2}}{520} \times 100 \\ &= \frac{280.5}{520} \times 100 \\ &= 53.94 \\ &= 54^{\text{th}} \text{ percentile} \end{aligned}$$