a survey of a track team concluded that they ran an average of 28 miles a week with a standard deviation of 7miles per week. Approximately what percentage of runners in the club ran less than 30 miles per week?

We have normal distribution with mean 28 and standard deviation 7:
m = 28
σ= 7
And we need to know what percentage of runners in the club ran less than 30 miles per week ($P\ (\ x < 30)$):

$$P\ (\ x < 30) = \int_{-\infty}^{30} f(x)dx$$

$f(x)$ - probability density function
The normal distribution has probability density:

$$f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-m)^2}{2\sigma^2}}$$

Therefore:

$$P\ (\ x < 30) = \int_{-\infty}^{30} \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-m)^2}{2\sigma^2}} dx$$

Calculating this integral:
$P\ (\ x < 30) = 0.6125 = 61.25\%$
Answer: 61.25%