18.5

You take the SAT and score 1100. The mean score for the SAT is 1026 and the standard deviation is 209. How well did you score on the test compared to the average test taker.

Solution:-

Mean score of SAT = $\mu = 1026$

Standard deviation of SAT = $\sigma = 209$

$$\text{My } Z \text{ score} = \frac{x - \mu}{\sigma}$$

$$= \frac{1100 - 1026}{209}$$

$$= \frac{74}{209}$$

$$= 0.3541$$

Probability (Z) = Probability $(Z = 0.3541) = 0.6368$

Average Test Taker has $Z = \frac{1026 - 1026}{209} = 0$

Probability $(Z = 0) = 0.5$

Hence compared to average test taker, my score is 0.3541 standard deviation better than average test taker.

In terms of probability my score is $(0.6368 - 0.5) \times 100\%$

$= 13.68\%$ better than average test taker