



Find the probability that the combined weight of the bride and groom is less than 380 pounds using the following three steps.

1. X is the weight of the bride and Y is the weight of the groom, where $X \sim N(150, 400)$ and $Y \sim N(190, 500)$. With this information, find the probability distribution for the combined weight of the bride and groom.
2. Then, using this distribution, find the standard score of 380 pounds.
3. Finally, use the standard score to find $P(X + Y < 380)$.