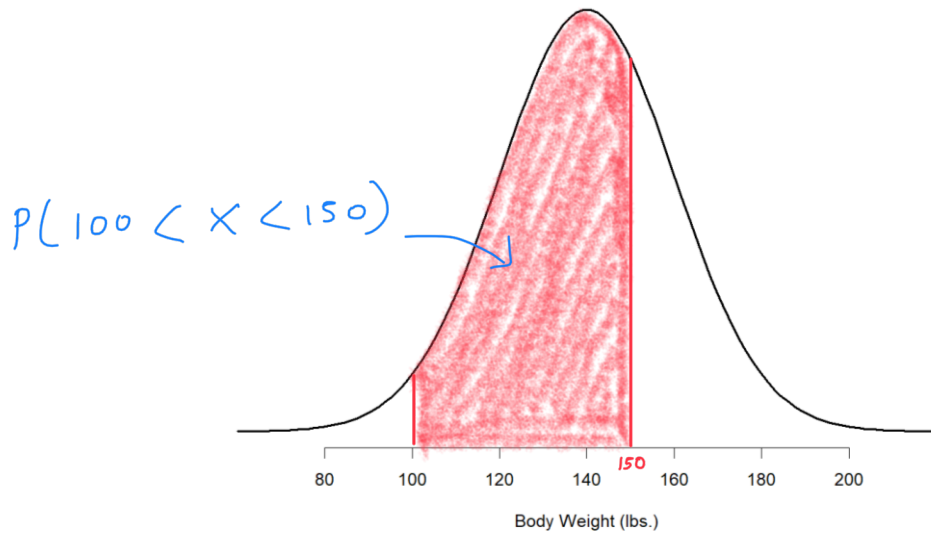


STAT 340
Chapter 9 – Practice Questions
Part II

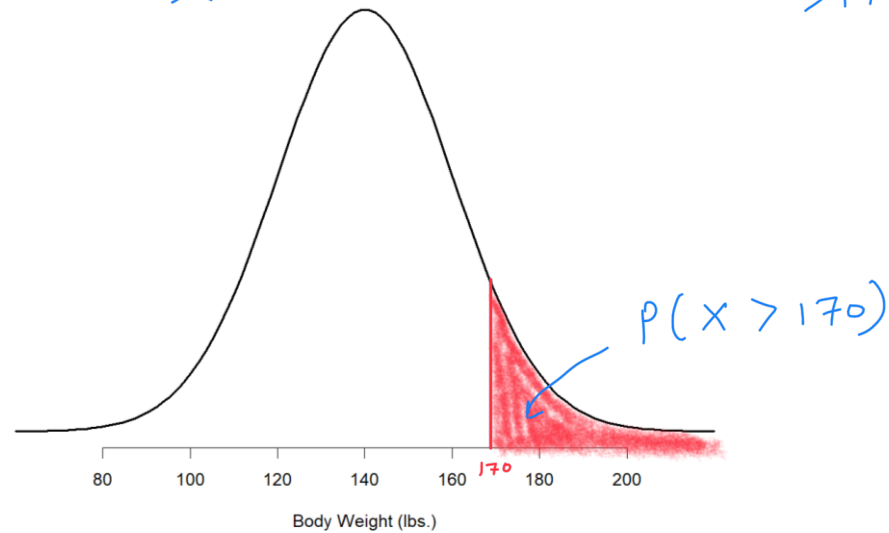
1. Given below is the normal density curve of the body weight (X) of a sample of 100 female students in ABC middle school. Shade the area under the curve to find the following probabilities.

- a. The probability that the body weight of a randomly selected female student is in between 100 and 150 lbs.
 P X $100 < X < 150$

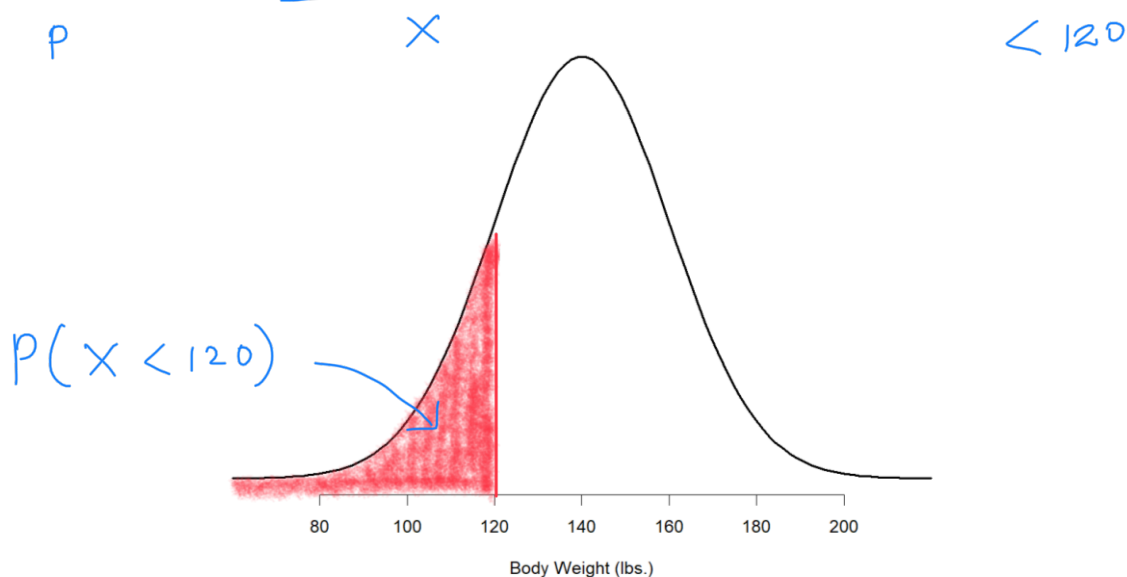


- b. The probability that the body weight of a randomly selected female student is greater than 170 lbs.

P X > 170



- c. The probability that the body weight of a randomly selected female student is less than 120 lbs.

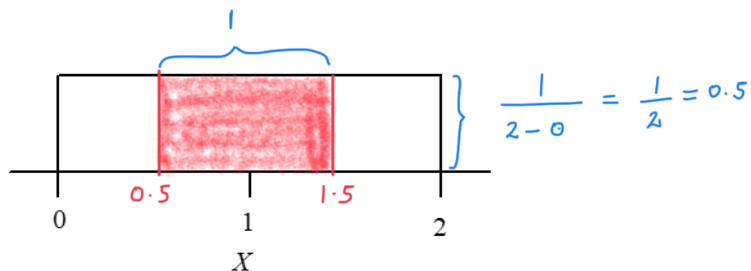


- d. What is the probability that the body weight of a randomly selected female student is exactly 125 lbs.?

$$p(X = 125) = 0$$

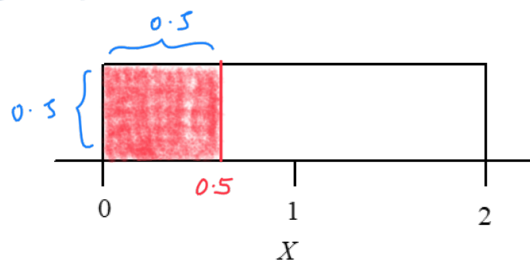
2. Find the following probabilities using the uniform density curve.

a. $P(0.5 < X < 1.5) = 0.5 \times 1 = 0.5$



b. $P(0.5 \leq X \leq 1.5) = 0.5$

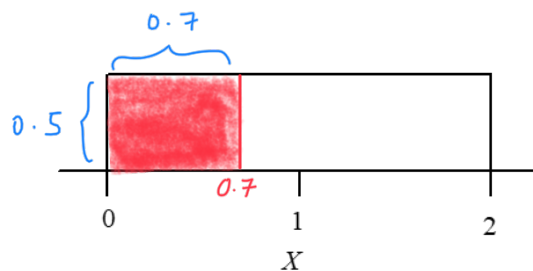
c. $P(0 < X \leq 0.5) = 0.5 \times 0.5 = 0.25$



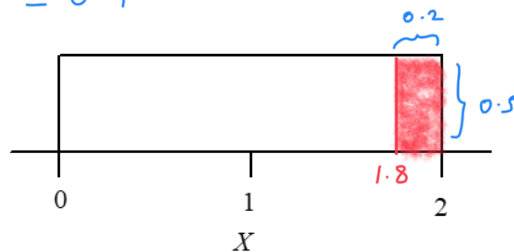
d. $P(Y = 1) = 0$

e. $P(Y \leq 0.7) = 0.35$

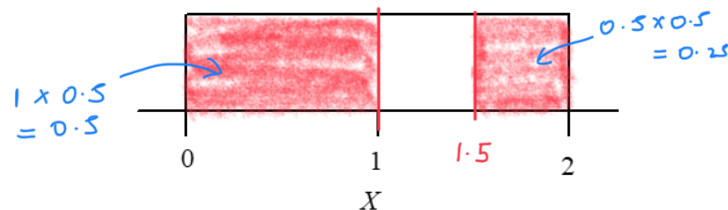
$$0.7 \times 0.5 = 0.35$$



f. $P(X > 1.8) = 0.5 \times 0.2 = 0.1$



g. $P(X \leq 1 \text{ or } X > 1.5) = 0.5 + 0.25 = 0.75$



3. In a randomized, double-blind study, the effectiveness of the drug Fragmin in preventing DVT in immobilized patients was tested. It compared patients who received Fragmin with patients who receive a placebo. Of the 1518 randomly chosen immobilized patients given Fragmin, 42 experienced a complication from DVT. Of the 1473 immobilized patients given a placebo, 73 experienced a complication from DVT.

- a. Compute the proportion of patents given Fragmin who experienced a complication from DVT. Do the same for the patents who received the placebo.

Fragmin : $\frac{42}{1518}$

Placebo : $\frac{73}{1473}$

- b. What are the risk and odds of experiencing a complication from DVT when an immobilized patient is given Fragmin? Given a placebo?

Risk (Fragmin) = $\frac{42}{1518}$

Risk (Placebo) = $\frac{73}{1473}$

Odds = $\frac{42/1518}{1 - 42/1518} = \frac{42}{1476} \approx \frac{1}{35}$

Odds = $\frac{73/1473}{1 - 73/1473} = \frac{73}{1400} \approx \frac{1}{19}$