Date: 4 / 11 / 2020

Name

ID (last 3 digits)

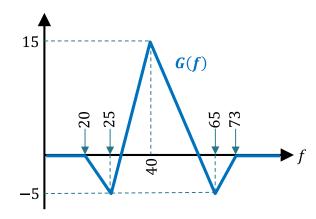
Instructions

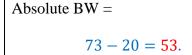
- Work alone or in a group of no more than three students. The group cannot be the same as any of your former groups
- Only one submission is needed for each group.
- You have two choices for submission:

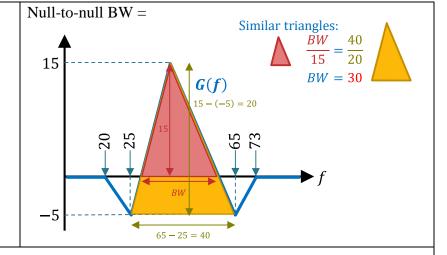
 (a) Online submission via Google Classroom
 - PDF only.
 - Only for those who can directly work on the posted files using devices with pen input.
 - Paper size should be the same as the posted file.

 - No scanned work, photos, or screen capture. Your file name should start with the 10-digit student ID of one member.
 - (You may add the IDs of other members, exercise #, or other information as well.)
 - (b) Hardcopy submission
- 1. Find the bandwidth (BW) values for the signal below.

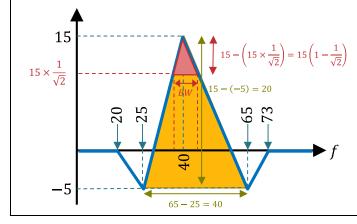
Note that the signal is even and real-valued in both domains and therefore we show only the positivefrequency side.







3-dB BW (half-power BW) =



Similar triangles:
$$\frac{BW}{15\left(1 - \frac{1}{\sqrt{2}}\right)} = \frac{40}{20}$$

$$BW = 30\left(1 - \frac{1}{\sqrt{2}}\right) \approx 8.7868 \approx 9$$