

You are MacGyver (or maybe MacGruber) and are stuck on some desolate desert island. Somehow a ticking nuclear bomb is also located on the island. Obviously, it needs to be defused. You have come up with one of your typically off-the-wall escape plans to de-activate the bomb, and part of the plan involves building an op amp circuit that must amplify a signal having a fairly high frequency. You found an op amp stuck to the bottom of your shoe, but the labeling is worn off, so you don't know anything about it. It is essential that you know the gain-bandwidth of the amp if your plan is to work — if the circuit does not provide enough voltage at the required frequency, the bomb will not be defused but instead will blow up instantly.

You have a signal generator on your cell phone and found a few unmarked resistors tangled in the lint of your pocket. You use the batteries out of your flashlight to serve as a power supply for the amp. You wire up the unmarked op amp using the unmarked resistors in a non-inverting configuration and perform three quick gain measurement on your clunky circuit. Here are the results:

At $f = 25$ kHz, the gain is 70.5.

At $f = 50$ kHz, the gain is 47.2.

At $f = 100$ kHz, the gain is 26.3.

That should be more than enough information to determine the gain-bandwidth of the amp. What is it?

GBW = _____