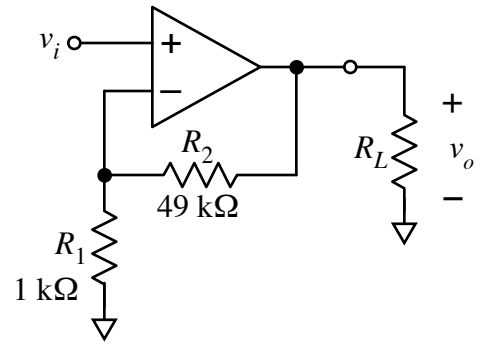In some application, you want to amplify a sinusoidal input having
an amplitude of 0.1 V and frequency of 50 kHz. You would like
to amplify the signal by a factor of 50 using a non-inverting amp,
but the primary consideration is to get the maximum average
power delivered to a load without any distortion.

To build the circuit, you have 3 op amps to choose from. Each is
ideal except that they have a gain-bandwidth limit and an output current limit — the current will be
"clipped" at the specified limit. No other limitations come into play.

OA1 : GBW = 1 MHz, I_{max} = 100 mA.

OA2 : GBW = 5 MHz, I_{max} = 75 mA.

OA3 : GBW = 10 MHz, I_{max} = 25 mA.

Which amp will allow for the biggest average power? _____

What is the maximum average power available to deliver to the load resistor?_____

Explain how you came to that conclusion.

Comments: 1) The value of the load resistor is irrelevant — it will be adjusted to a resistance that
corresponds to combination of v_o and i_o with maximum output power. 2) Obviously, you are looking for
the amp that gives the biggest $P_o = \dfrac{v_o i_o}{2}$ (The factor of 1/2 is due to this being a sinusoid, and so we
should use average power.)

Write your answers — and whatever work will fit — on this sheet. Staple any sheets with additional work behind.