

In **30 minutes** do as many as you can of the following problems, **without help** from any references, computing devices, or people.

Write your solutions either on a printout, or blank paper. If you use blank paper, do the problems on **1 sheet of paper, in the order given**. Upload a pdf of your solutions to **Gradescope, by midnight**.

Compute the following. You may use more than one technique of integration on each problem. Show your work.

1. $\int (t^2 + 1) \ln t \, dt$

2. $\int_0^{1/2} \sin^2(\pi t) \cos^5(\pi t) \, dt$