

# Math 199 CD3 Merit Worksheet 11: Center of Mass

March 2, 2022

For the following problem, find the center of mass of the following regions:

1. The region bounded by  $y = 4 - x^2$  that is in the first quadrant
2. The region bounded by  $y = 3 - e^{-x}$ , the  $x$ -axis,  $x = 2$  and the  $y$ -axis
3. The triangle with vertices  $(-2, -2)$ ,  $(4, -2)$ ,  $(4, 4)$

4. the function  $y = \cos x$  and the  $x$ -axis between  $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$

5. The 2 functions  $y = x^2$  and  $y = 6 - x$

6. The function  $y = e^{2x}$  and the  $x$ -axis between  $-1 \leq x \leq 1$