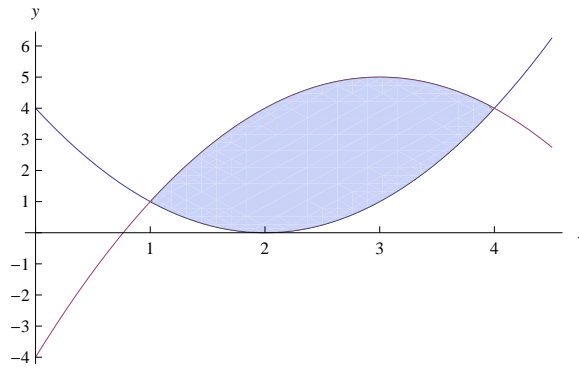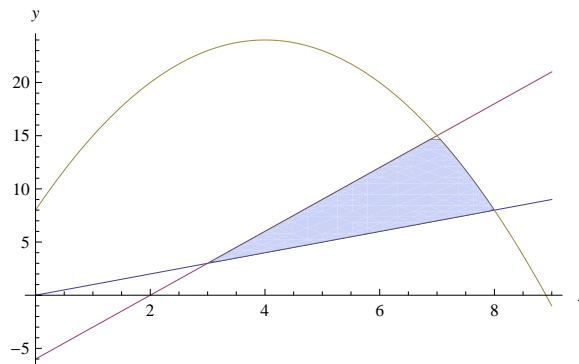## Area problems

For each of the following, set up an integral or integrals equal to the area of the given region. As time allows, try to evaluate the integrals you set up.

1. the region bounded between $y = (x-2)^2$ and $y = 5 - (x-3)^2$ as shown



2. the region bounded by $y = x$, $y = 3x - 6$ and $y = 24 - (x-4)^2$ as shown



3. the region bounded between $y = 2 - 3x$ and $x^2 + y^2 = 4$ as shown