

### Math 10270 : Quiz 3

1. (5 points) The distance from the focus  $F$  of a parabola to its directrix is 3 units. Suppose the parabola is cut by a line parallel to the directrix and 7 units away.

Use the result of Archimedes to determine the area of the parabolic section.

2. (5 points) Consider the circle  $(x - 3)^2 + (y + 2)^2 = 20$  and the line  $y = x - 3$ . Sketch both on the  $xy$  plane. Then find the points of intersection of the circle and the line.