

Name \_\_\_\_\_

- You have 15 minutes
- No calculators
- Show sufficient work

1. (4 points) The following curves intersect. Find the  $x$ -value for each point of intersection.

$$y = x^2 \ln(9 - 2x) + 20$$

$$y = 100 \ln(9 - 2x) + 20$$

2. (3 points) Some of the values for an exponential function  $y = f(x)$  are shown below. Determine a formula for this function.

$x$	$f(x)$
6	2
9	10
12	50
15	250
18	1250

3. (3 points) If  $p(x) = \frac{5}{\sqrt[3]{4e^x + 9}}$  then determine a formula for  $p^{-1}(x)$ .