

Name \_\_\_\_\_

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

1. (1 point) Simplify the following quantity.

$$e^{-4\ln(\sqrt{5})}$$

2. (3 points) Determine all values of  $x$  which satisfy the equation below.

$$\ln\left(\frac{4x+3}{9-5x}\right) = 2$$

3. (3 points) Given that  $g(t) = \sqrt[5]{3 + 2e^{t-4}}$ , find a formula for  $g^{-1}(t)$ .

4. (3 points) Determine the formula for an exponential function given that its graph goes through the points  $(3, 54)$  and  $(9, 24)$ .