Handout 4: Irrational to the Core

1. Solve
$$y = 3^x + 2^{2x} + 1$$
 for $x = 3$.

2. Solve
$$y = \log_5(5x) + \log e^x$$
 for $x = 2$.

7. Simplify and solve
$$y = 6^{\log_6(2x^2)}$$
 for $x = 4$ without a calculator.

3. Solve
$$y^2 = \log x^2$$
 for $x = 5$.

8. Simplify and solve
$$4y = \ln e^{(15x+y)}$$
 for $x = 3$ without a calculator.

4. Solve
$$y = \log_4(16x^2)$$
 for $x = 4$ without a calculator.

9. Simplify and solve
$$y = \log_7(49^{-2x})$$
 for $x = 4$ without a calculator.

5. Solve
$$y = \ln(4e^2)$$
.

10. Solve
$$y = e^{\ln(2x+7)} + 2x^{(\log_{10} 16)} - 2\log(3x)$$
 for $x = 5$.

6. Simplify and solve $10^{5x+y} = 100^{(2x)}$ for x = 2 without a calculator.

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