Handout 4: Irrational to the Core - Answers

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

$$y = 92.$$

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

$$y = 2.2992.$$

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

$$y = 1.1823.$$

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

$$y = 4$$
.

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

$$y = 3.3863.$$

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

$$y = -2$$
.

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

$$y = 32.$$

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

$$y = 15.$$

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

$$y = -16$$
.

10. Solve
$$y = e^{\ln(2x+7)} + 2x^{\log_1 016} 2 \log(3x)$$
 for $x = 5$.

$$y = 30.6478$$
.

©2013 Shmoop University, Inc. All rights reserved. For classroom use only. Want to print this out for your classroom? Go for it. All other reproduction and distribution is prohibited.