1. Simplify $\sqrt[8]{w^6x^2y^8}$. Express your answer using positive rational exponents. (2 pts.)
   Time Limit: 1 minute
   $$\frac{3}{w^3x^3}|y|$$
   More problems like this: p. 602 problems 26-34.

2. Simplify $(a^3b^{-4}c^{20})^{\frac{1}{3}}$. Express your answer using positive rational exponents. (2 pts.)
   Time Limit: 1 minute
   $$\frac{3}{a^5c^{\frac{5}{2}}}b^{\frac{1}{2}}$$
   More problems like this: p. 646 problems 1-8.

3. Rewrite $(3x)^5 = 2y$ as a logarithmic equation. (1 pt.)
   Time Limit: 20 seconds
   $$\log_{3x} 2y = 5$$

4. Rewrite $\log_3(4x + 1) = 2y - 3$ as an exponential equation (1 pt.)
   Time Limit: 20 seconds
   $$3^{2y-3} = 4x + 1$$

5. Evaluate $\log_4 \frac{1}{32}$. (3 pts.)
   Time Limit: 1 minute
   $$\frac{-5}{2}$$
   More problems like this: p. 626 problems 31, 32, 34-38.

6. Evaluate $3^{5\log_3 2}$. (3 pts.)
   Time Limit: 1 minute
   $$32$$
   More problems like this: p. 626 problems 33, 39.
Chapter 11 Practice Test

Name: ____________________

7. Graph \( y = 2^{(3x-1)} - 4 \) . (4 pts.)
Time Limit: 5 minutes

Graph of \( y = 2^{(3x-1)} - 4 \).

More problems like this: p. 646 problems 9-12.

8. Graph and state the domain for \( y = \log_3 (3 - 2x) + 1 \) . (5 pts.)
Domain: ________
Time Limit: 10 minutes

Domain: \( x < \frac{3}{2} \)

Graph of \( y = \log_3 (3 - 2x) + 1 \).

More problems like this: p. 627 problems 55-60.

9. Find the domain for and solve \( \log_5(3x - 2) = \log_5 2 + \log_5 (x + 1) \) .
(6 pts.)
Time Limit: 2 minutes

Domain: \( x > \frac{2}{3} \).
Solution: \( x = 4 \)

More problems like this: p. 647 problems 17-21.

Get out your calculator or check one out from Ms. Griffin.
### Chapter 11 Practice Test

**Name: __________________**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Equation</th>
<th>Solution</th>
<th>Round to the Nearest Thousandth</th>
<th>Time Limit</th>
<th>More Problems Like This:</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>$y = \log_{22} 35$</td>
<td>$y \approx 1.150$</td>
<td></td>
<td>1 minute</td>
<td>p. 639 problems 22, 23, 32, 35.</td>
</tr>
<tr>
<td>11.</td>
<td>$y = \text{antilog}(0.45)$</td>
<td>$y = 2.818$</td>
<td></td>
<td>1 minute</td>
<td>p. 632 problems 23-28.</td>
</tr>
<tr>
<td>12.</td>
<td>$y = \text{antiln}3.2$</td>
<td>$y \approx 24.533$</td>
<td></td>
<td>1 minute</td>
<td>p. 643 problems 19-24.</td>
</tr>
<tr>
<td>13.</td>
<td>$4.5 = 2.6e^{1.3r}$</td>
<td>$t \approx 0.422$</td>
<td></td>
<td>2 minutes</td>
<td>p. 648 problems 40, 44.</td>
</tr>
<tr>
<td>14.</td>
<td>$5^{(2-x)} = 7^{(x+1)}$</td>
<td>$x \approx 0.358$</td>
<td></td>
<td>3 minutes</td>
<td>p. 639 problems 26 - 29.</td>
</tr>
<tr>
<td>15.</td>
<td>You find a retirement plan that deducts $150 each month from your paycheck and transfers it to your retirement account. This plan pays an 8% rate. If you continue to work for this company for 30 years and do not change your contribution amount, how much will you retire with? (4 pts.)</td>
<td>$F_n \approx $223,553.92</td>
<td></td>
<td>3½ minutes</td>
<td>p. 613 problems 39, 41.</td>
</tr>
</tbody>
</table>
16. A certain bank savings account will pay 2.5% compounded twice a year if you agree to deposit $5,000 and leave it in the bank for 5 years. How much will be in the account at the end of this time? (4 pts.)

Time Limit: 3 minutes

\[ A \approx 5661.35 \]


17. A bacteria population of 200 grows to 550 at the end of an hour. If this growth continues, how long will it take to reach a population of 1800? (4 pts.)

Time Limit: 4 minutes

\[ t \approx 2.172 \text{ hours} \]