

### Worksheet on Section 3.1 and Exponent Review

Graph each of the Exponential Functions b) state the domain and range in interval and set notation.

1.  $f(x) = 2^x + 3$

2.  $y = 3^{(-x+1)}$

3.  $f(x) = -5^{x+2}$

4.  $y = \left(\frac{1}{2}\right)^x - 2$

#### Review

5. Simplify:  $\frac{4^9 \cdot 8^{-4}}{16^3}$

6. Simplify:  $(2r^{-1})(4r^2)^{-2}$

7. Simplify:  $\frac{3a^3 - 6a^6}{a^{-1}}$

8. Simplify:  $\left(\frac{49}{25}\right)^{-\frac{1}{2}}$

9. Simplify:  $\left(\frac{125}{x^6}\right)^{\frac{1}{3}}$

10. Simplify:  $\frac{4ab^{-\frac{1}{2}} - 2ab^{\frac{1}{2}}}{(a^2b)^{-\frac{1}{2}}}$

11. Simplify:  $\frac{4 - x^{-4}}{2 - x^{-2}}$

12. Solve:  $3\sqrt[3]{\frac{8^{x+1}}{16^x}} = 32$

13. Solve:  $6^{2x} - 34 \cdot 6^x - 72 = 0$