

Solve the following Exponential Equations.

1. $3^{2x+3} = 27^{x+1}$

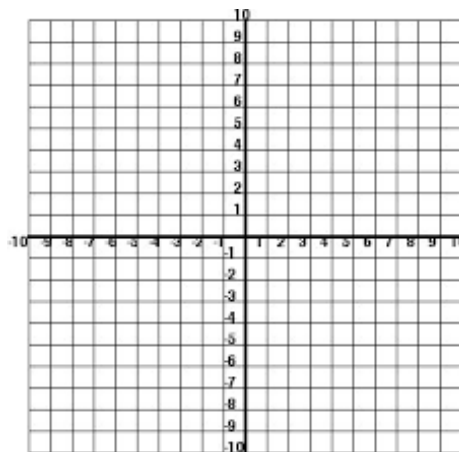
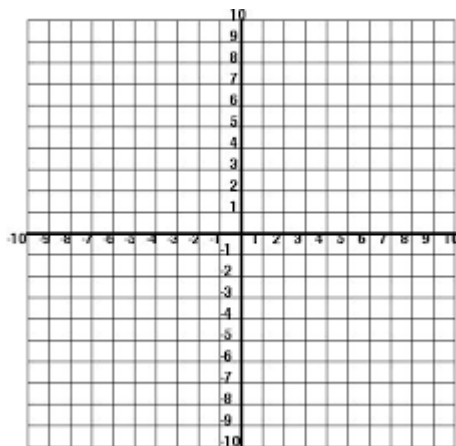
2. $4^{3x} = 8^{x+1}$

3. $3^{x-14} = \left(\frac{1}{3}\right)^{2x-1}$

For each exponential function, tell the characteristics and sketch with at least 3 specific points and the asymptote dotted in.

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

5. $f(x) = -3^{x+2} - 4$



Growth or Decay?

Growth or Decay?

Transformations: _____

Transformations: _____

Domain: _____ Range: _____

Domain: _____ Range: _____

Asymptote: _____

Asymptote: _____

Increasing or Decreasing?

Increasing or Decreasing?

X-intercept: _____ Y-intercept: _____

X-intercept: _____ Y-intercept: _____

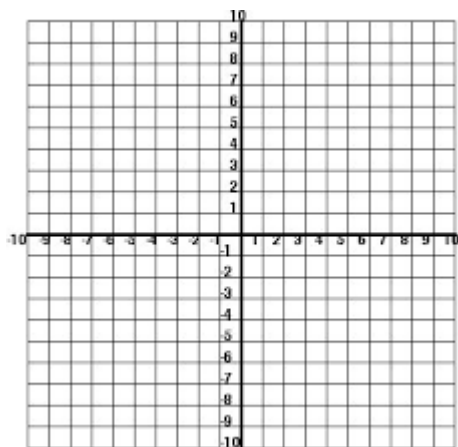
End Behavior: As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

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As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

6. $f(x) = (\frac{1}{4})^{x-3} + 5$



Growth or Decay?

Transformations: _____

Domain: _____ Range: _____

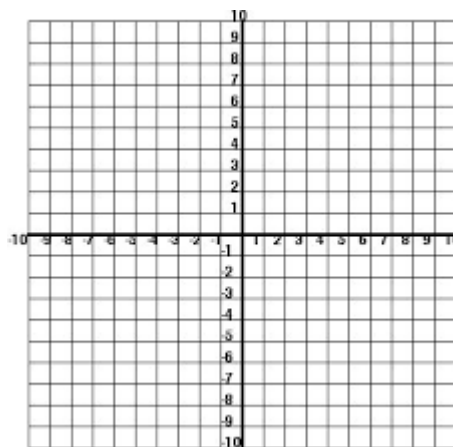
Asymptote: _____

Increasing or Decreasing?

X-intercept: _____ Y-intercept: _____

End Behavior: As $x \rightarrow$ _____, $f(x) \rightarrow$ _____
 As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

7. $f(x) = \frac{1}{3} (2)^{x+1} + 2$



Growth or Decay?

Transformations: _____

Domain: _____ Range: _____

Asymptote: _____

Increasing or Decreasing?

X-intercept: _____ Y-intercept: _____

End Behavior: As $x \rightarrow$ _____, $f(x) \rightarrow$ _____
 As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

Solve each of the following using the correct formula.

8. You put \$5000 into an account that pays 6% interest compounded quarterly. How much will you have in 10 years?

9. How long will it take your money in #5 to triple?

10. Tuition at a college is \$35,000 per year this year (2019). It increase 2.5% per year. Write an equation for this growth. Using this model, how much will it be in 2023?

11. Your car depreciates at 15% every other year. You bought it for \$35,000 6 years ago. How much is it worth now?