**Unit 2 Practice: Key Features of Exponential Graphs**

 Graph each exponential equation then identify the key features of the graph.

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Increase or Decrease

Asymptote @ \_\_\_\_\_\_\_\_\_\_

Y-Intercept @ \_\_\_\_\_\_\_\_\_

End behavior

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_

as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Increase or Decrease

Asymptote @ \_\_\_\_\_\_\_\_\_\_

Y-Intercept @ \_\_\_\_\_\_\_\_\_

End behavior

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_

as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Increase or Decrease

Asymptote @ \_\_\_\_\_\_\_\_\_\_

Y-Intercept @ \_\_\_\_\_\_\_\_\_

End behavior

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_

as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Increase or Decrease

Asymptote @ \_\_\_\_\_\_\_\_\_\_

Y-Intercept @ \_\_\_\_\_\_\_\_\_

End behavior

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_

as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

***Identify the transformations that occurred to each equation below based on either the parent function*** $y=2^{x}$

1. $y=2^{x+4}$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $y=5\left(2\right)^{x}+6$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $y=2^{\left(5x\right)}+7$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $y=\frac{1}{3}⋅2^{\left(x-3\right)}-5$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. $y=-3⋅2^{\left(x+4\right)}+7$

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***For each exponential equation below, identify the vertical asymptote, domain, and range.***

1. $y=3\left(2\right)^{x+4}-7$

Horizontal asymptote at y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_ as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

1. $y=2^{x-1}+9$

Horizontal asymptote at y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_ as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

1. $y=6^{x}-3$

Horizontal asymptote at y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_ as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_

1. $y=2\left(\frac{1}{2}\right)^{x-4}+5$

Horizontal asymptote at y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

as $x\rightarrow \infty ,y\rightarrow $\_\_\_\_\_\_\_\_\_ as $x\rightarrow -\infty ,y\rightarrow $\_\_\_\_\_\_\_