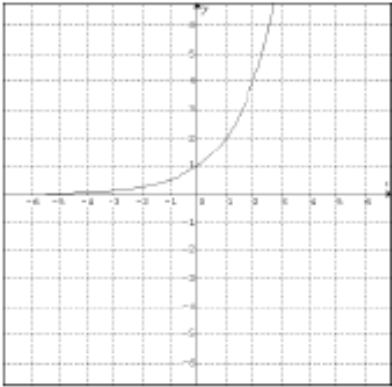


Homework 3.3 Characteristics of Exponential Functions

Find the **domain**, **range**, **asymptote**, **y-intercept** and **end behavior** of each exponential function's graph.

1.



Domain:

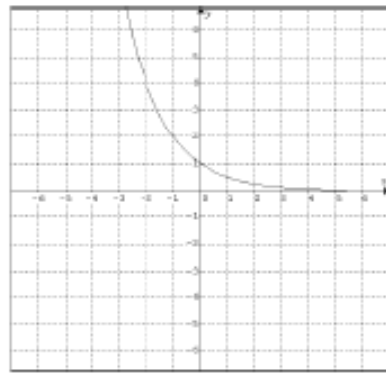
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

2.



Domain:

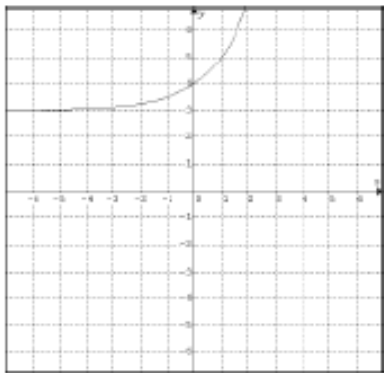
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

3.



Domain:

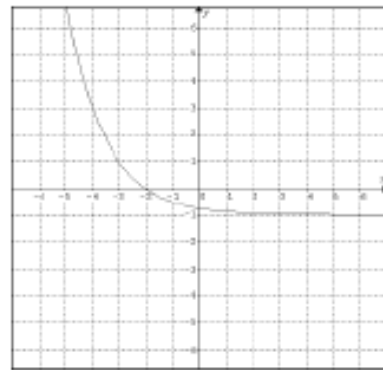
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

4.



Domain:

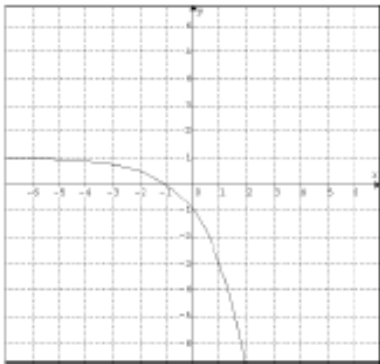
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

5.



Domain:

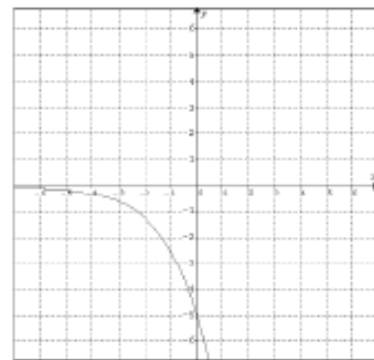
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

6.



Domain:

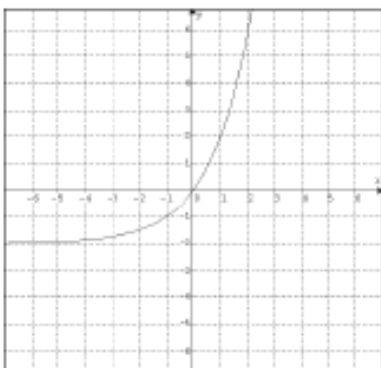
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

7.



Domain:

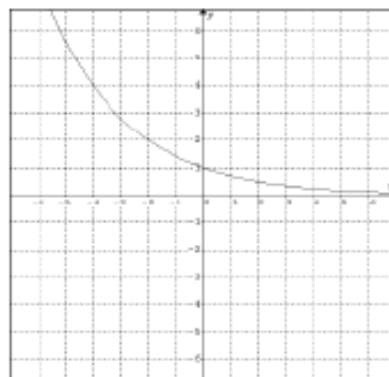
Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

8.



Domain:

Range:

Asymptotes:

Y-intercept:

End Behavior:
 as $x \rightarrow -\infty$, $y \rightarrow$
 as $x \rightarrow \infty$, $y \rightarrow$

3.3 Answers

- 1 Domain: $(-\infty, \infty)$; Range: $(0, \infty)$; Asymptote: $y=0$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow 0$ and as $x \rightarrow \infty$, $y \rightarrow \infty$
- 2 Domain: $(-\infty, \infty)$; Range: $(0, \infty)$; Asymptote: $y=0$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow \infty$ and as $x \rightarrow \infty$, $y \rightarrow 0$
- 3 Domain: $(-\infty, \infty)$; Range: $(3, \infty)$; Asymptote: $y=3$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow 3$ and as $x \rightarrow \infty$, $y \rightarrow \infty$
- 4 Domain: $(-\infty, \infty)$; Range: $(-1, \infty)$; Asymptote: $y=-1$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow \infty$ and as $x \rightarrow \infty$, $y \rightarrow -1$
- 5 Domain: $(-\infty, \infty)$; Range: $(-\infty, 1)$; Asymptote: $y=1$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow -1$ and as $x \rightarrow \infty$, $y \rightarrow -\infty$
- 6 Domain: $(-\infty, \infty)$; Range: $(-\infty, 0)$; Asymptote: $y=0$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow 0$ and as $x \rightarrow \infty$, $y \rightarrow -\infty$
- 7 Domain: $(-\infty, \infty)$; Range: $(-2, \infty)$; Asymptote: $y=-2$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow -2$ and as $x \rightarrow \infty$, $y \rightarrow \infty$
- 8 Domain: $(-\infty, \infty)$; Range: $(0, \infty)$; Asymptote: $y=0$; End Behavior: as $x \rightarrow -\infty$, $y \rightarrow \infty$ and as $x \rightarrow \infty$, $y \rightarrow 0$

