Algebra 2 Name_____

Assignment

Date_____ Period____

Evaluate each expression.

1) $\log_3 9$

2) $\log_7 343$

3) $\log_3 \frac{1}{243}$

4) $\log_7 49$

5) $\log_3 81$

6) $\log_2 8$

7) $\log_6 36$

8) $\log_3 \frac{1}{9}$

9) $\log_3 27$

10) $\log_4 64$

11) $\log_2 \frac{1}{4}$

12) $\log_2 64$

13) $\log_4 16$

14) $\log_2 4$

15) $\log_5 \frac{1}{125}$

Rewrite each equation in exponential form.

16) $\log_4 64 = 3$

17) $\log_8 64 = 2$

18) $\log_{15} \frac{1}{225} = -2$

19) $\log_{12} 144 = 2$

20) $\log_{49} 7 = \frac{1}{2}$

Rewrite each equation in logarithmic form.

21) $16^{\frac{1}{2}} = 4$

22) $19^2 = 361$

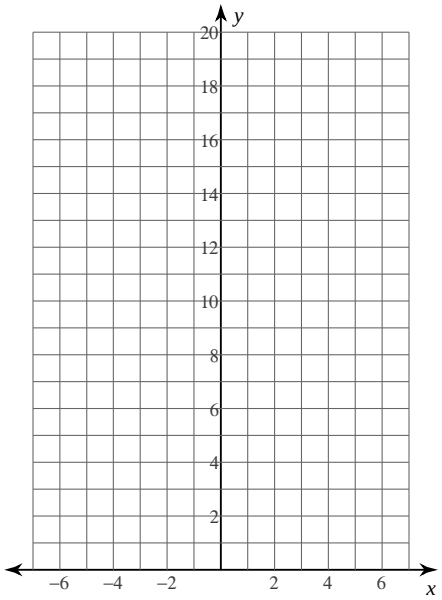
23) $15^2 = 225$

24) $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$

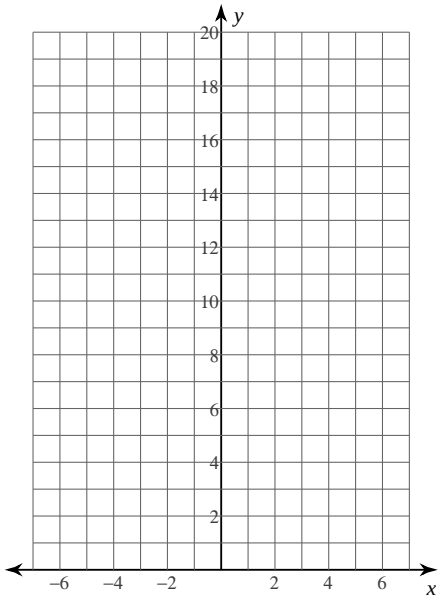
25) $4^2 = 16$

Sketch the graph of each function.

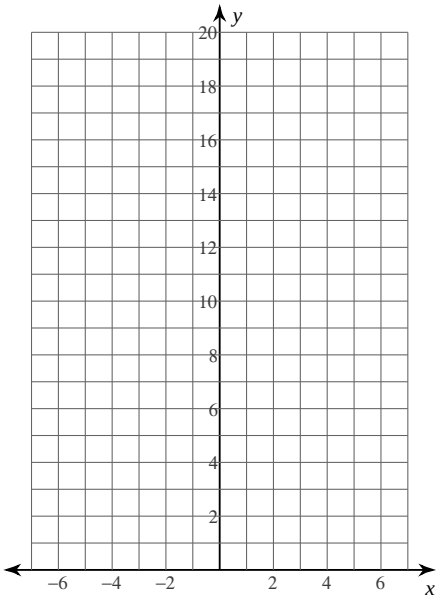
26) $y = 3 \cdot 2^x$



27) $y = 5 \cdot 2^x$

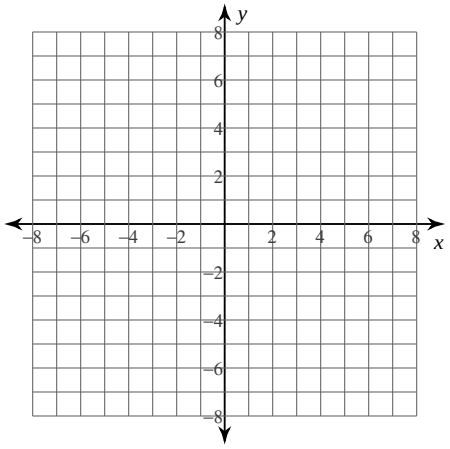


28) $y = 4 \cdot \left(\frac{1}{2}\right)^x$

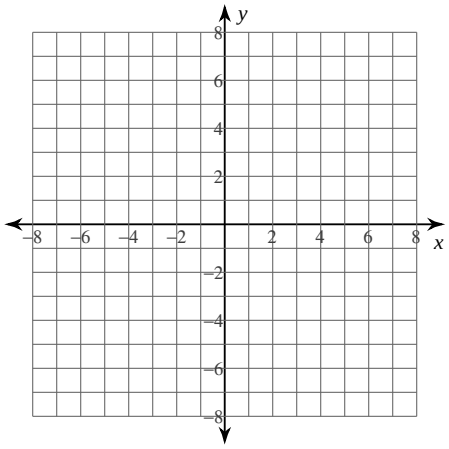


Identify the domain and range of each. Then sketch the graph.

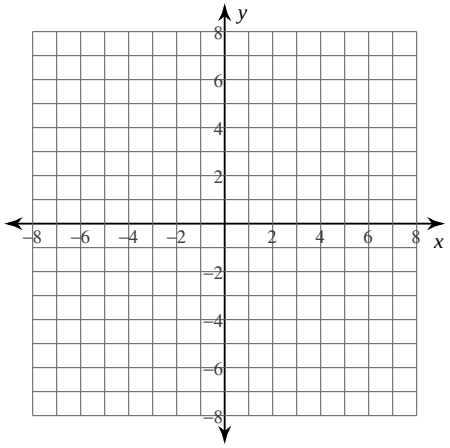
29) $y = \log_{\frac{1}{3}}(x+6) + 1$



30) $y = \log_3(x-1) + 3$



31) $y = \log_3(x-1) + 2$



Algebra 2 Name_____

Assignment

Date_____ Period____

Evaluate each expression.

1) $\log_3 9$

2

2) $\log_7 343$

3

3) $\log_3 \frac{1}{243}$

–5

4) $\log_7 49$

2

5) $\log_3 81$

4

6) $\log_2 8$

3

7) $\log_6 36$

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8) $\log_3 \frac{1}{9}$

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10) $\log_4 64$

3

11) $\log_2 \frac{1}{4}$

–2

12) $\log_2 64$

6

13) $\log_4 16$

2

14) $\log_2 4$

2

15) $\log_5 \frac{1}{125}$

–3

Rewrite each equation in exponential form.

16) $\log_4 64 = 3$

$4^3 = 64$

17) $\log_8 64 = 2$

$8^2 = 64$

18) $\log_{15} \frac{1}{225} = -2$ $15^{-2} = \frac{1}{225}$

19) $\log_{12} 144 = 2$

$12^2 = 144$

20) $\log_{49} 7 = \frac{1}{2}$ $49^{\frac{1}{2}} = 7$

Rewrite each equation in logarithmic form.

21) $16^{\frac{1}{2}} = 4$ $\log_{16} 4 = \frac{1}{2}$

22) $19^2 = 361$

$\log_{19} 361 = 2$

23) $15^2 = 225$

$\log_{15} 225 = 2$

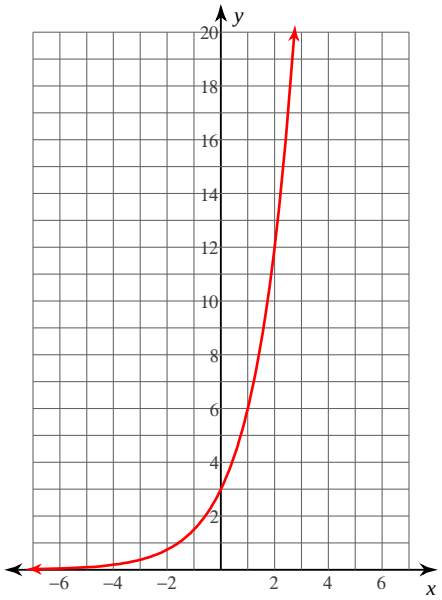
24) $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$ $\log_{\frac{1}{12}} \frac{1}{144} = 2$

25) $4^2 = 16$

$\log_4 16 = 2$

Sketch the graph of each function.

26) $y = 3 \cdot 2^x$



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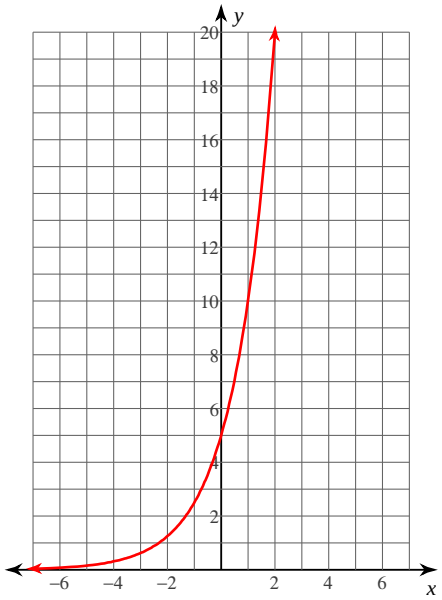

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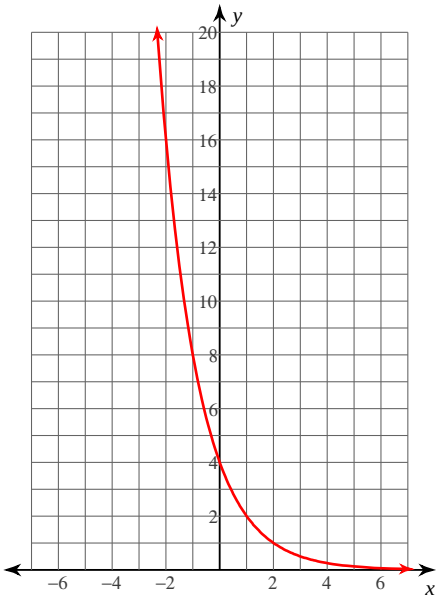
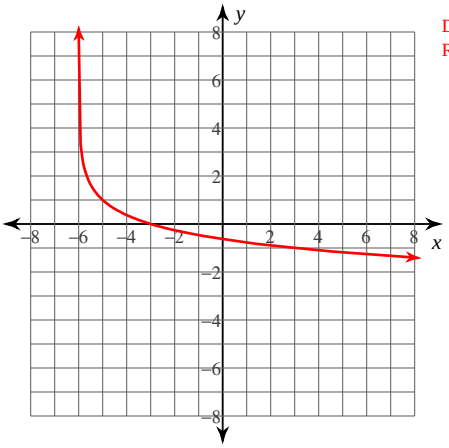


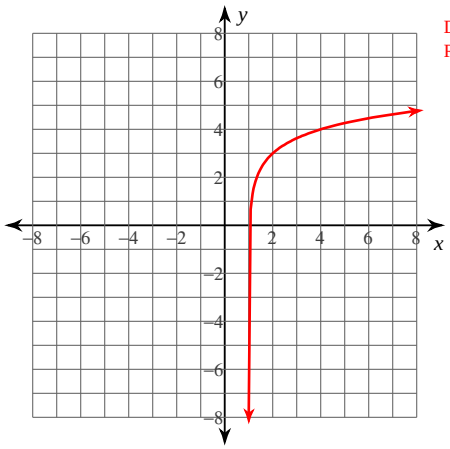
Identify the domain and range of each. Then sketch the graph.

29) $y = \log_{\frac{1}{3}}(x+6) + 1$



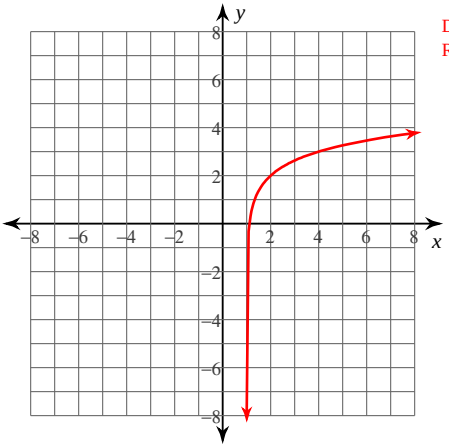
Domain: $x > -6$
Range: All reals

30) $y = \log_3(x-1) + 3$



Domain: $x > 1$
Range: All reals

31) $y = \log_3(x-1) + 2$



Domain: $x > 1$
Range: All reals