

Find the Domain, Range, and Asymptote of each function

<p>1. $f(x) = \log_3(x - 3) + 2$ Domain: _____ Range: _____ Asymptote: _____</p>	<p>2. $f(x) = -3^{x-2} + 7$ Domain: _____ Range: _____ Asymptote: _____</p>
<p>3. $f(x) = \ln(x) - 5$ Domain: _____ Range: _____ Asymptote: _____</p>	<p>4. $g(x) = -e^{x-2} - 3$ Domain: _____ Range: _____ Asymptote: _____</p>

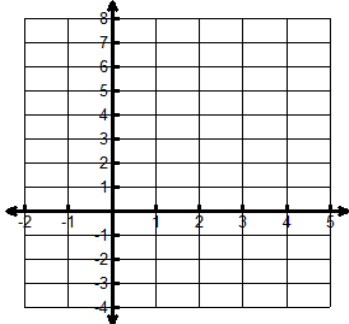
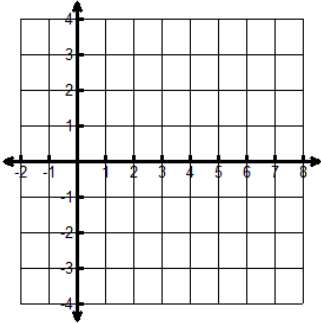
Describe the Transformation in each function

<p>5. $f(x) = \log_4(x - 1) - 2$</p>	<p>6. $f(x) = -2^x - 1$</p>
<p>7. $h(x) = e^{-x+1} + 2$</p>	<p>8. $f(x) = \ln(-x - 1) + 4$</p>

State whether the function is increasing or decreasing and determine the domain.

<p>9. $f(x) = -2^x - 5$</p>	<p>10. $f(x) = \left(\frac{1}{2}\right)^{x+1} + 2$</p>
<p>11. $f(x) = \log_3(x - 2) + 7$</p>	<p>12. $f(x) = -\log_4(x) + 2$</p>

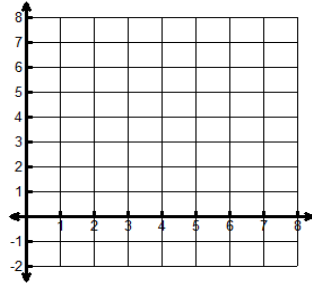
Graph the Functions Below

<p>13. $y = 5^x - 3$</p>  <p>Transformations _____</p> <p>Domain _____ Range _____</p> <p>Asymptote _____</p> <p>X-intercept _____ Y-intercept _____</p> <p>Increasing or Decreasing _____</p>	<p>14. $y = \log_5(x) - 1$</p>  <p>Transformations _____</p> <p>Domain _____ Range _____</p> <p>Asymptote _____</p> <p>X-intercept _____ Y-intercept _____</p> <p>Increasing or Decreasing _____</p>
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9.10 - Logs and Exponents Review

Name: _____

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



Transformations _____

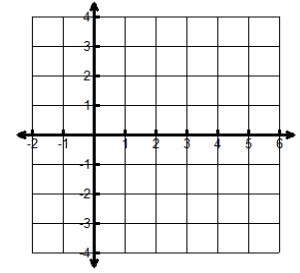
Domain _____ Range _____

Asymptote _____

X-intercept _____ Y-intercept _____

Increasing or Decreasing

16. $y = -\log_2(x-1)$



Transformations _____

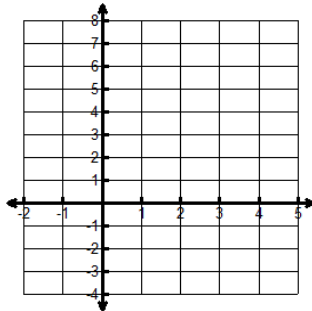
Domain _____ Range _____

Asymptote _____

X-intercept _____ Y-intercept _____

Increasing or Decreasing

17. $y = e^{x-1} - 1$



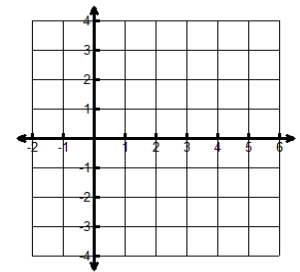
Transformations _____

Domain _____ Range _____

Asymptote _____

X-intercept _____ Y-intercept _____

18. $y = -\ln(x-2)$



Transformations _____

Domain _____ Range _____

Asymptote _____

X-intercept _____ Y-intercept _____

State the parent function and Describe the Transformation.

19. $f(x) = -|x| - 4$

20. $f(x) = 3\sqrt{x+1}$

21. $f(x) = (x+5)^2 - 2$

22. $f(x) = 2|x+4| + 3$

23. $f(x) = 2(x+4)^2 + 3$

9.10 - Logs and Exponents Review
Cumulative Review

Name: _____

13. If $A = \begin{bmatrix} -2 & 5 \\ -1 & 6 \end{bmatrix}$, then find $|A|$.

14. The dimensions of matrix B are 4×7 , and the dimensions of matrix C are 3×7 . If $A \cdot B = C$, what must be the dimensions of matrix A?

15. Solve the following linear system:

$$\begin{aligned} 2x - 3y &= -1 \\ -3x + 5y &= 3 \end{aligned}$$

16. What is the center of the following circle: $(x - 4)^2 + (y + 1)^2 = 28$

17. Identify the following conic: $y^2 - 5x + 2y = 3 + 2x^2$

18. Find the exact value from the following: $\tan 30^\circ$

19. Find the reference angle from the following: $\theta = \frac{2\pi}{3}$

20. Find the following: $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

21. Find the equation of a circle with center $(-2, 3)$ and radius 5.

22. Determine the amplitude from the following: $f(x) = \frac{3}{4}\sin(2x) + 3$.

23. Give an equivalent expression that is the same as $\cos^2 \theta$

24. If $\tan \theta = -\frac{5}{3}$ and θ is in quadrant IV, which is the exact value of $\cos \theta$?

26. In $\triangle ABC$, $a = 4$, $b = 2$, $c = 5$, find the value of $\angle C$.

26. Multiply the following matrices: $\begin{bmatrix} 2 & -1 \\ 3 & 5 \end{bmatrix} \cdot \begin{bmatrix} 3 & 1 \\ -1 & 5 \end{bmatrix}$

9.10 - Logs and Exponents Review

Name: _____

27. Let $\vec{u} = \langle -1, 5 \rangle$, $\vec{w} = \langle 3, 2 \rangle$, $\vec{y} = \langle 2, -4 \rangle$ to find the following: $2\vec{y} - \vec{w} + \vec{u}$

28. An airplane is traveling 350 kilometers per hour due east. A wind is blowing 25 kilometers per hour $S15^\circ W$. What is the resulting speed of the airplane?

29. Simplify the following: $\frac{2i}{1-3i}$

30. **Rewrite** in log form: $5^x = 125$

31. **Rewrite** in exponential form: $\log_4 70 = 3x$

32. Expand: $\log_4 \frac{x^5 \sqrt{y}}{z^3}$

33. Condense: $2\log 8 + 5\log z + \log x$

34. Solve: $(4^{x+5}) - 7 = 9$

35. $\log_2 x + \log_2(x+2) = \log_2(x+6)$