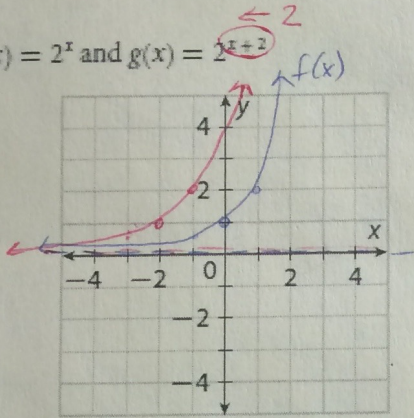Name: **Selected Answers**
Date:_____ Class: **A3 ᵗ B7**

Describe the effect of each transformation on the parent function. Graph the parent function and its transformation. Then determine the domain, range, and y-intercept of each function.
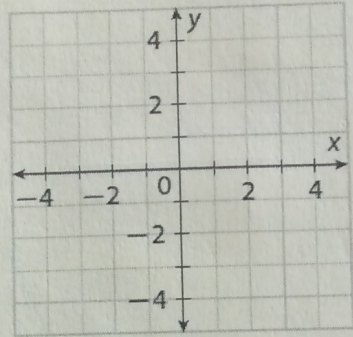
3. $f(x) = 2^x$ and $g(x) = 2^{x+2}$ ← 2

*Shift Left 2*



$f(x)$

|  | $f(x)$ | $g(x)$ |
|---|---|---|
| Domain: | $(-\infty, \infty)$ | $(-\infty, \infty)$ |
| Range: | $(0, \infty)$ | $(0, \infty)$ |
| Y-intercept: | $(0, 1)$ | $(0, 4)$ |

$2^{0+2} = 2^2 = 4$
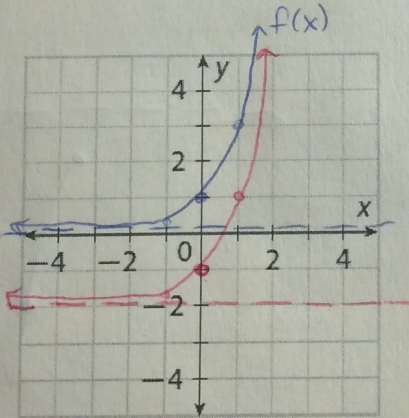
4. $f(x) = 2^x$ and $g(x) = 2^x + 3$



Domain:
Range:
Y-intercept:

5. $f(x) = 3^x$ and $g(x) = 3^x - 2$

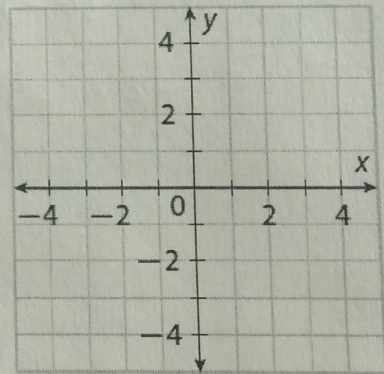*Shift Down 2*



$f(x)$

|  | $f(x)$ | $g(x)$ |
|---|---|---|
| Domain: | $(-\infty, \infty)$ | $(-\infty, \infty)$ |
| Range: | $(0, \infty)$ | $(-2, \infty)$ |
| Y-intercept: | $(0, 1)$ | $(0, -1)$ |

6. $f(x) = 3^x$ and $g(x) = 3^{x-3}$



Domain:
Range:
Y-intercept:

Name:_____
Date:_____ Class:_____

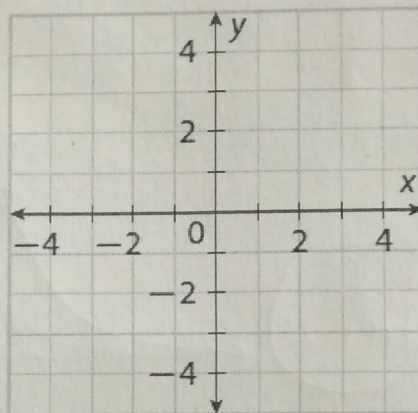**State the domain and range of the given function. Then identify the new values of the reference points and the asymptote. Use these value function.**
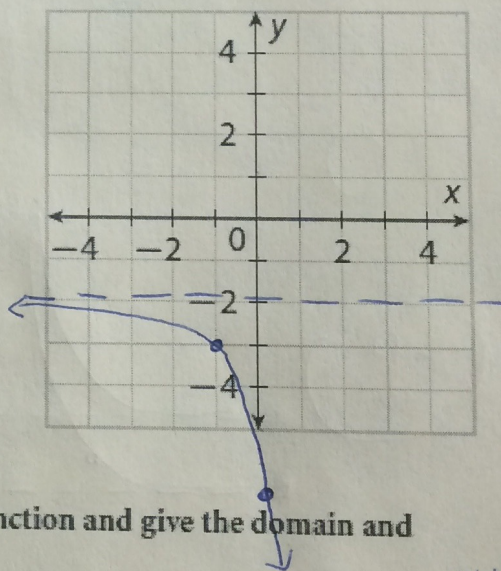
11. $h(x) = 3^{x+2} - 1$

Domain:
Range:
Asymptote:
~~Reference Point:~~
y-intercept:



V. Flip, Shift Left 1, Shift Down 2

15. $k(x) = -5^{x+1} - 2$

Domain: $(-\infty, \infty)$
Range: $(-\infty, -2)$
Asymptote: $y = -2$
~~Reference Point:~~
y-intercept: $(0, -7)$

$-5^{0+1} - 2 = -(5)^1 - 2 = -5 - 2 = -7$



**Describe the transformation(s) from each parent function and give the domain and range of each function.**

3. $g(x) = -\left(\frac{1}{10}\right)^{x-1} + 2$   Parent: $\left(\frac{1}{10}\right)^x$

Transformations:
• V. Flip  • Shift Right 1
      • Shift Up 2
Domain: $(-\infty, \infty)$
Range:

4. $f(x) = \frac{1}{2}^{x+3} - 6$   Parent: $\left(\frac{1}{2}\right)^x$

Transformations:

Domain:
Range: