Name: $\qquad$ Date: $\qquad$

| Learning Goal 7.1 | Applying one or more transformations to an exponential <br> function, including translations, stretches and reflections. |
| :--- | :--- |

Example What function in the form $y=c^{x}$ can be used to describe the graph shown?



Example Sketch each base function, then each of the following transformations, without using technology. Identify the transformed values of the given coordinates.
a. $y=2^{x}$
$y=2^{(x+5)}-2$

$(0,1)$
$(1,2)$
$(2,4)$
b. $y=3^{x} \quad y=3^{x-6}-5$

c. $y=5^{x}$
$y=\frac{1}{2}(5)^{x}$

d. $y=2^{x}$
$y=-3(2)^{\frac{x}{2}}$

e. $y=3^{x}$
$y=2(3)^{-(x-4)}$

$(0,1)$
$(1,3)$
$(2,9)$
$(0,1)$
$(1,5)$
$(2,25)$

