

MCR3UI - Unit 5 Day 3**Transformation of Exponential Functions: Translations and Reflections****Practice Questions**

1. Describe the transformation that maps the function $y = 4^x$ onto each function given.
 - (a) $y = 4^x + 2$
 - (b) $y = 4^{-x}$
 - (c) $y = 4^{x-3}$
 - (d) $y = 4^{x+4}$
 - (e) $y = -4^x$
 - (f) $y = 4^{x-1} - 5$

2. Sketch the graph of each function in question 1. Use the graph of $y = 4^x$ as the base.

3. Write the equation for the function that results from each transformation applied to the base function $y = 5^x$
 - (a) translate down 3 units
 - (b) shift right 2 units
 - (c) reflect in the x -axis
 - (d) translate left $\frac{1}{2}$ unit
 - (e) reflect in the y -axis and up 2 units
 - (f) shift up 1 unit and left 2.5 units