

7. $h(x) = (x + 3)^3 + 4$

Parent Function Name: cubic
 Parent Function Equation: $y = x^3$

Transformations
 a: 1 no change
 h: -3 translate left 3
 k: 4 translate up 4

8. $f(x) = -2^{x-1} + 9$

Parent Function Name: exp. growth
 Parent Function Equation: $y = 2^x$

Transformations
 a: -1 reflect
 h: 1 trans right 1
 k: 9 trans. up 9

9. Name the Parent function. Identify a, h, and k. Name the transformations. State the movements.

$y = 4(x + 7)^2 - 3$

Parent function name: Quadratic
 Parent Function Equation: $y = x^2$

Transformations
 a: 4 dilation 4 (narrows)
 h: -7: translation left 7
 k: -3 translation down 3

10. Name the Parent function. Identify a, h, and k. Name the transformations. State the movements.

$y = -1/3\sqrt[3]{x + 4} + 2$

Parent function name: Cube Root
 Parent Function Equation: $y = \sqrt[3]{x}$

Transformations
 a: -1/3 ~~dilation~~ dilation wider reflection
 h: -4: translate left 4 units
 k: 2 translate 2 up

11. Write the equations:

- a. Cubic, reflected, dilated narrow, translated left 2. $y = 2(x + 2)^3$
 b. Quadratic, reflected, translated up 5. $y = -x^2 + 5$