

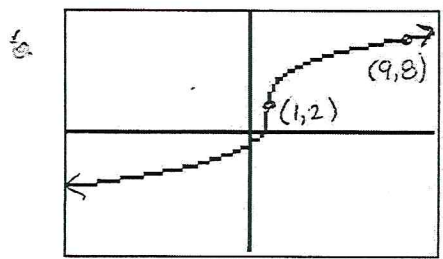
On 6-9, write the equation of the transformed graph by doing each of the following:

a) Identify the parent function and write it as an equation.

b) Identify the translation (h,k) that has occurred...where did the key point travel to?

c) If a second point is given, use it to calculate a.

d) Write your final equation by substituting a, h & k into the equation you wrote for part a above



a) $f(x) = \sqrt[3]{x}$

b) $(0,0) \rightarrow (1,2)$ $h=1, k=2$
translation 1R, 2U

c) $y = a\sqrt[3]{x-1} + 2$ w/ $(9,8)$

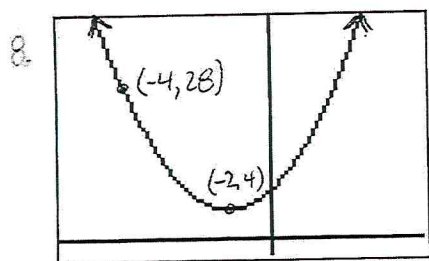
$$8 = a\sqrt[3]{9-1} + 2$$

$$8 = a\sqrt[3]{8} + 2$$

$$8 = 2a + 2 \quad d) f(x) = 3\sqrt[3]{x-1} + 2$$

$$2a = 6$$

$$a = 3$$



a) $f(x) = x^2$

b) $(0,0) \rightarrow (-2,4)$ $h=-2, k=4$
translation 2L, 4U

c) $y = a(x-2)^2 + 4$ w/ $(-4,28)$

$$28 = a(-4+2)^2 + 4$$

$$28 = a(-2)^2 + 4$$

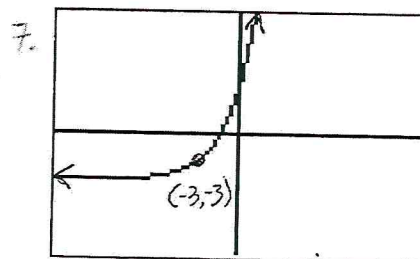
$$28 = 4a + 4$$

$$4a = 24$$

$$a = 6$$

d) $f(x) = 6(x-2)^2 + 4$

$$f(x) = 6(x+2)^2 + 4$$



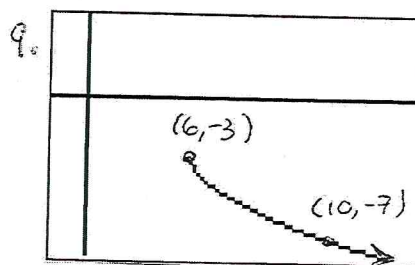
a) $f(x) = 2^x$

b) $(0,1) \rightarrow (-3,3)$ $h=-3, k=-3$
translation 3L, 3D

c) NO 2ND POINT $\rightarrow a=1$

d) $f(x) = 2^{x-3} - 3$

$$f(x) = 2^{x+3} - 3$$



a) $f(x) = \sqrt{x}$

b) $(0,0) \rightarrow (6,-3)$ $h=6, k=-3$
translation 6R, 3D

c) $y = a\sqrt{x-6} - 3$ w/ $(10,-7)$

$$-7 = a\sqrt{10-6} - 3$$

$$-7 = a\sqrt{4} - 3$$

$$-7 = 2a - 3$$

$$2a = -4$$

$$a = -2$$

d) $f(x) = -2\sqrt{x-6} - 3$

$$f(x) = -2\sqrt{x-6} - 3$$

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