

AA PREP—REVIEW OF TRANSFORMATION STRUCTURE

$$f(x) = \pm a(\pm(x-h)) + k$$

⊖:
REFLECTION
OVER
X-AXIS

EX) $y = -x^2$

V STRETCH OR
COMPRESSION

EX) $y = 2x^2$ OR $y = \frac{1}{2}x^2$

V STRETCH
 $\times 2$

V COMP
 $\times \frac{1}{2}$

⊖:
REFLECTION
OVER
Y-AXIS

EX) $y = \sqrt{-x}$

H TRANSLATION
(SHIFT)

Ⓛ/Ⓡ

⊕ OPPOSITE IF
WHAT IS
APPEARS

EX) $y = (x-2)^2$ OR $y = (x+2)^2$

V TRANSLATION
Ⓢ/Ⓣ

EX) $y = x^2 + 2$ OR $y = x^2 - 2$

EX 1: Identify the parent function and all transformations.

a) $g(x) = 5\sqrt{-x}$ $y = \sqrt{x}$ V STRETCH $\times 5$
REFLECT OVER Y-AXIS

b) $f(x) = \frac{1}{4}(x-9)^2$ $y = x^2$ V COMP $\times \frac{1}{4}$
H TRANSLATION 9 Ⓡ

c) $y = -\frac{1}{x-6}$ $y = \frac{1}{x}$ REFLECT OVER X-AXIS
H TRANSLATION 6 Ⓡ

d) $y = 2^{x+9} + 1$ $y = 2^x$ H TRANSLATION 9 Ⓛ
V TRANSLATION 1 Ⓢ

e) $f(x) = 3x^3 + 6$ $y = x^3$ V STRETCH $\times 3$
V TRANSLATION 6 Ⓢ

f) $g(x) = |x-7| - 8$ $y = |x|$ H TRANSLATION 7 Ⓡ
V TRANSLATION 8 Ⓣ