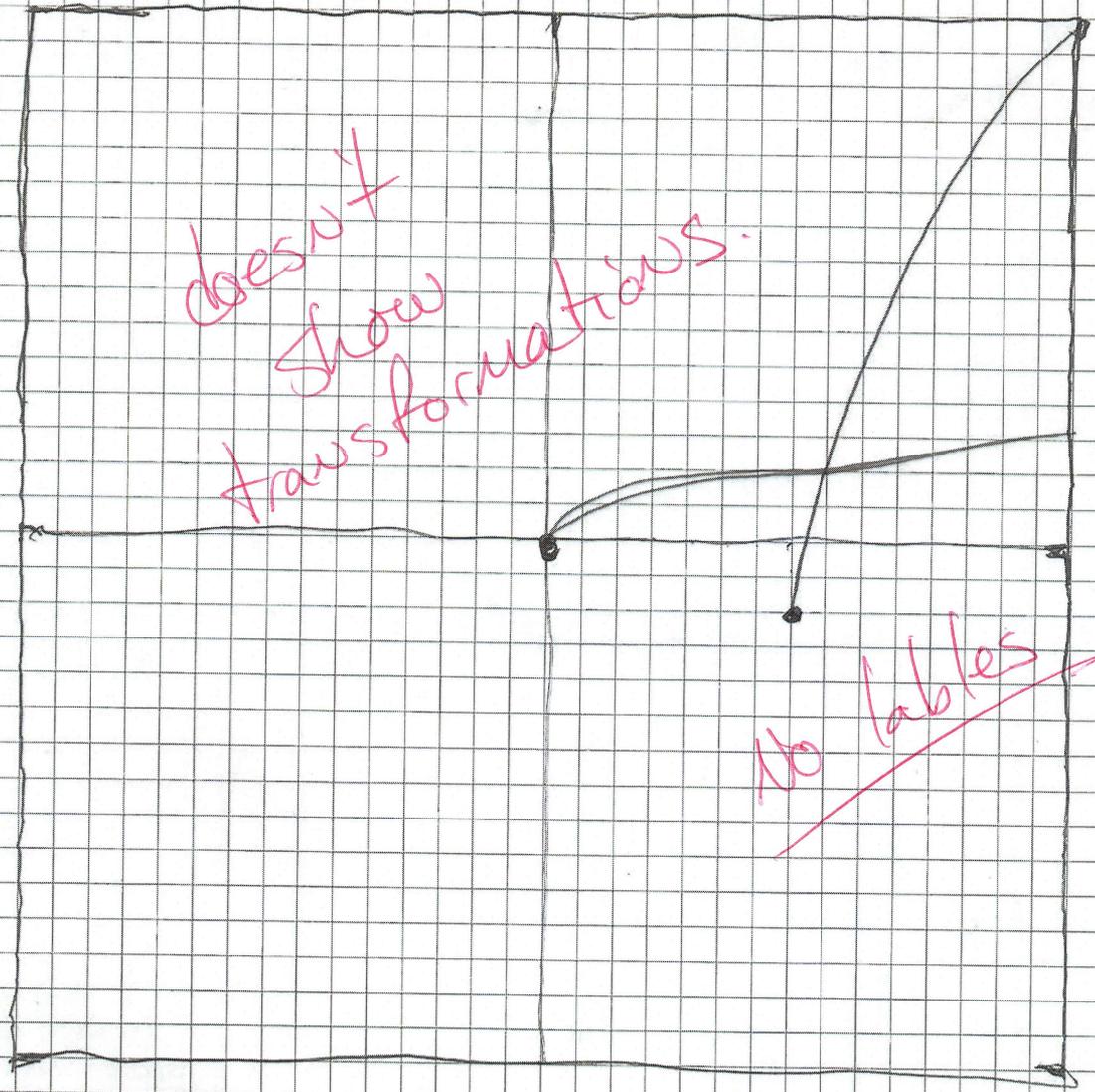


#1. $g(x) = 5\sqrt{3x-21} - 2$
 $f(x) = \sqrt{x}$

S/S
Lawley

$a = 8.66$
 $h = 7$
 $k = -2$

horizontal shift 7 units
vertical shift - 2 units
vertically stretched



No labels

+1.5

No more graph paper, will ask to resubmit after this.

$$\#2. g(x) = -5\sqrt{3x-21} + 2$$

$$y = a\sqrt{x-h} + k \quad y = \sqrt{x}$$

$$g(x) = -5\sqrt{3x-21} + 2$$

$$a = -8.66$$

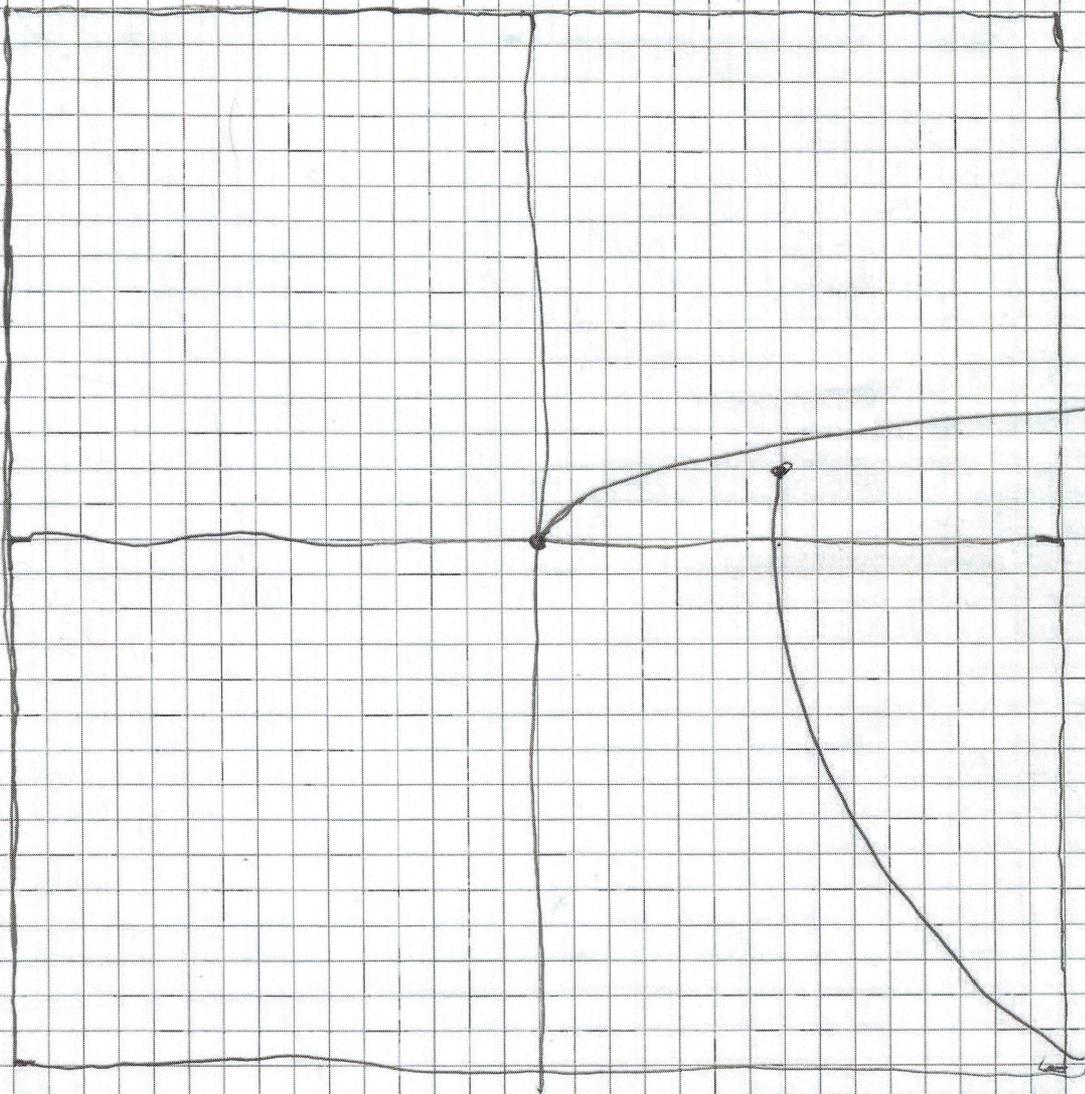
$$h = 7$$

$$k = 2$$

horizontal shift - 7 units

vertical shift - 2 units

vertically stretched



#3. $g(x) = 5\sqrt{3x-2} - 11$

$$y = 5\sqrt{3}\sqrt{x + \frac{2}{3}}$$

$$y = a\sqrt{x-h} + k$$

horizontal shift $g(x) = f(x+h)$ - to the left h units

$g(x) = f(x-h)$ - to the right h units

$a = 8.66$
 $h = -10.6$
 $k = 0$

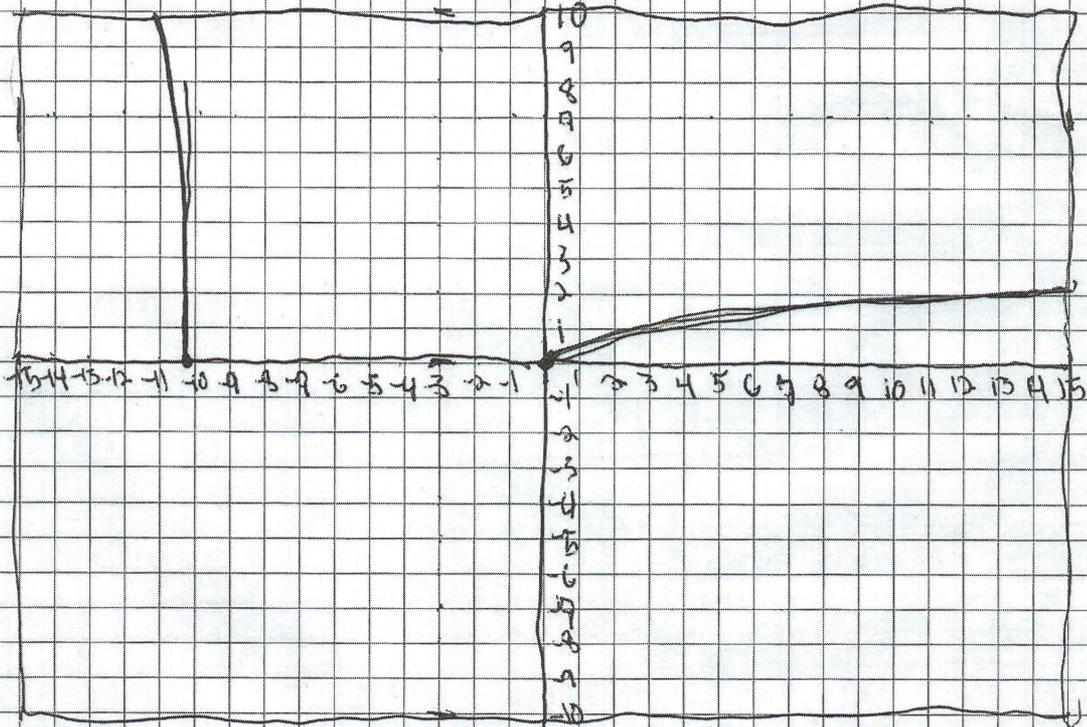
$10.6 \text{ units} = h$

vertical shift $g(x) = f(x) + k$ - up k units

$g(x) = f(x) - k$ down k units

vertical stretch $a > 1$ - makes it narrower

$0 < a < 1$ - makes it wider



$$\#4. g(x) = \sqrt[3]{(-2x+8)^3} + 5$$

parent function $f(x) = \frac{1}{x^3}$

transformation equation $y = \frac{a}{x-h} + k$

~~g(x) =~~ $g(x) = \sqrt[3]{(-2x+8)^3} + 5$

~~a=3~~ $a=3$

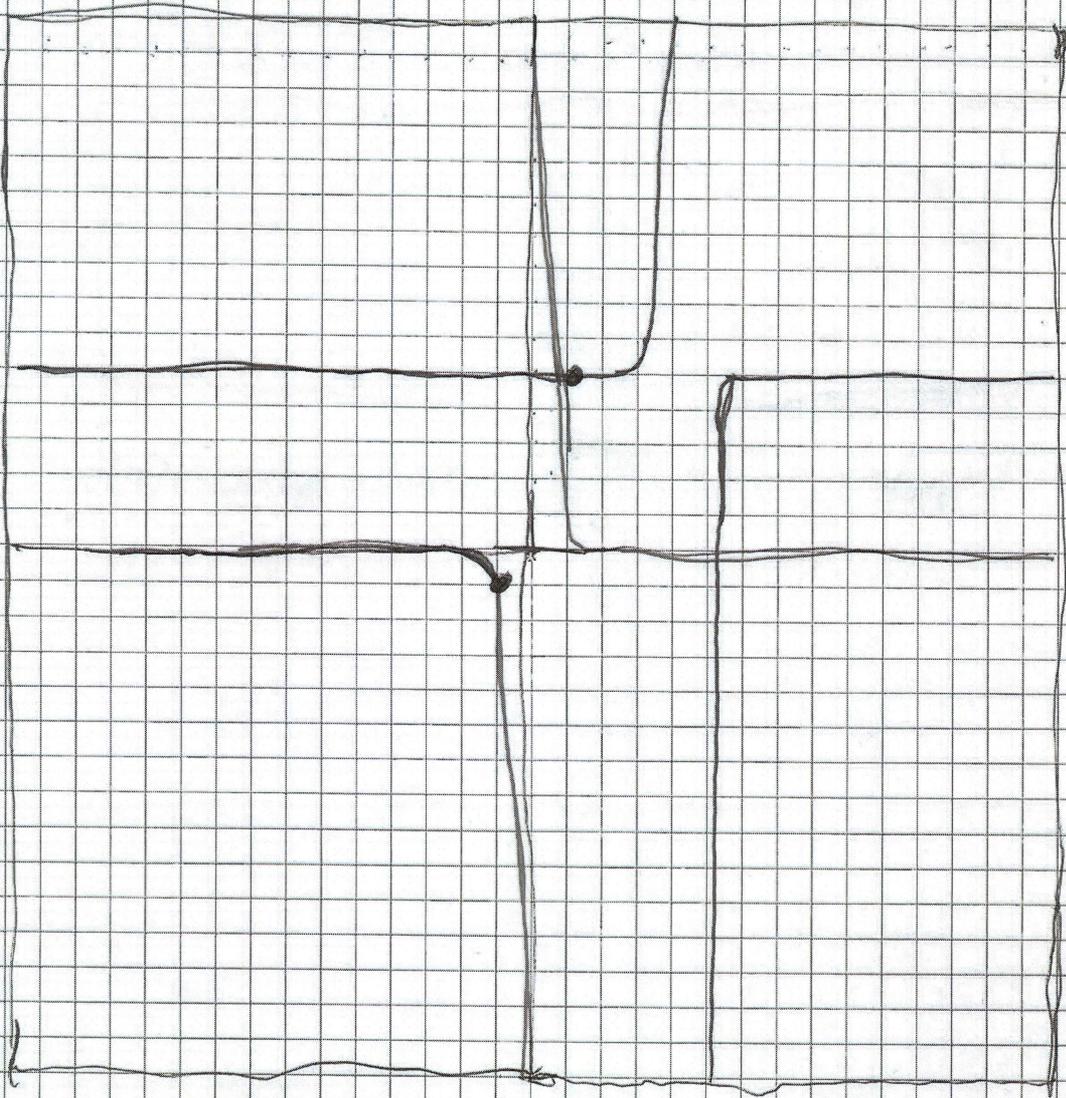
~~h=4~~ $h=4$

~~k=5~~ $k=5$

horizontal shift = 4

vertical shift = 5

vertical stretch = stretched



parent function - $f(x) = \sqrt{x}$

Transformation - $y = a\sqrt{x-h} + k$

Find $a, h,$ and k - $y = 5\sqrt{3}\sqrt{x+7} - 6$

$a = 8.66$

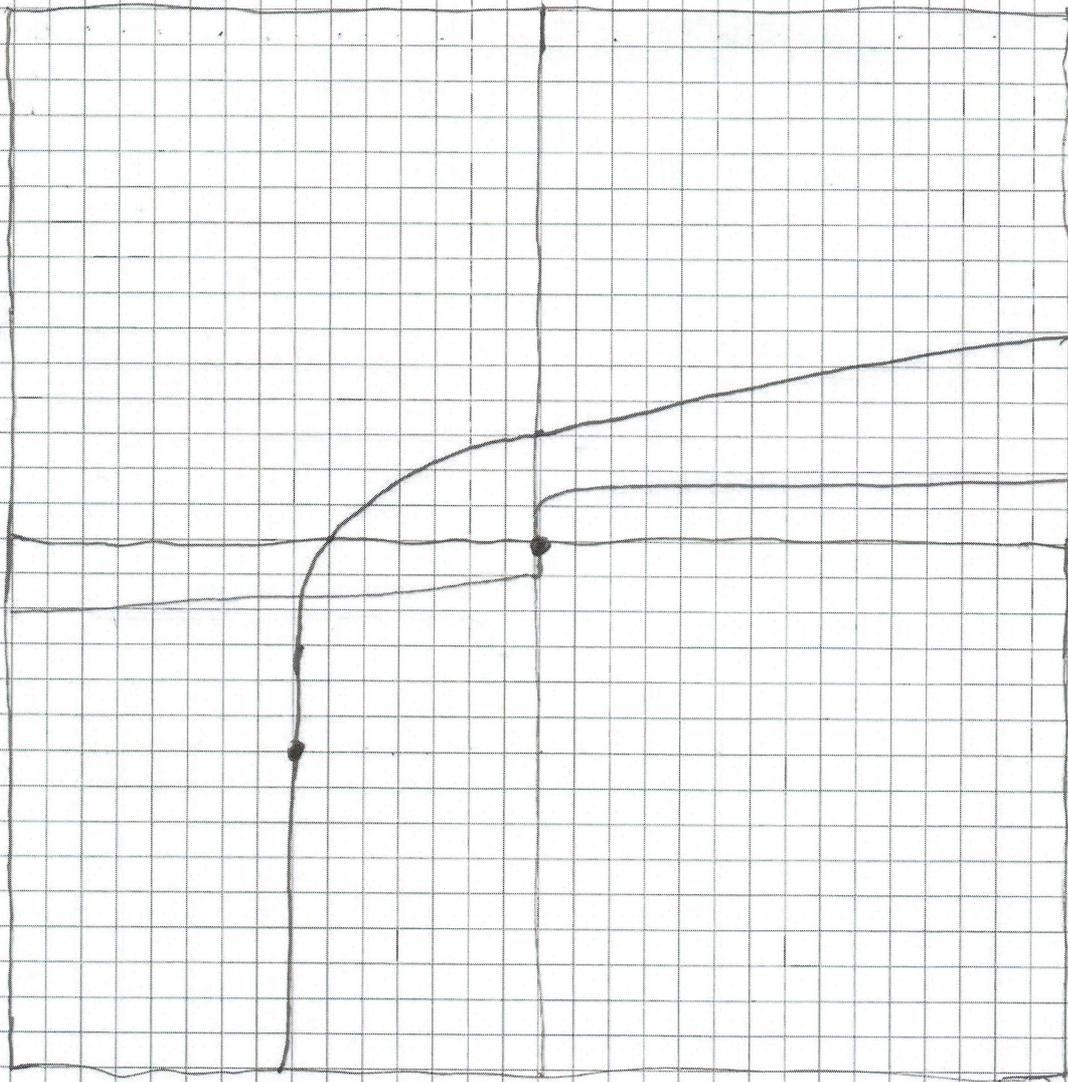
$h = -7$

$k = -6$

horizontal shift = 7

vertical shift = 0

vertical stretch = stretched



+15

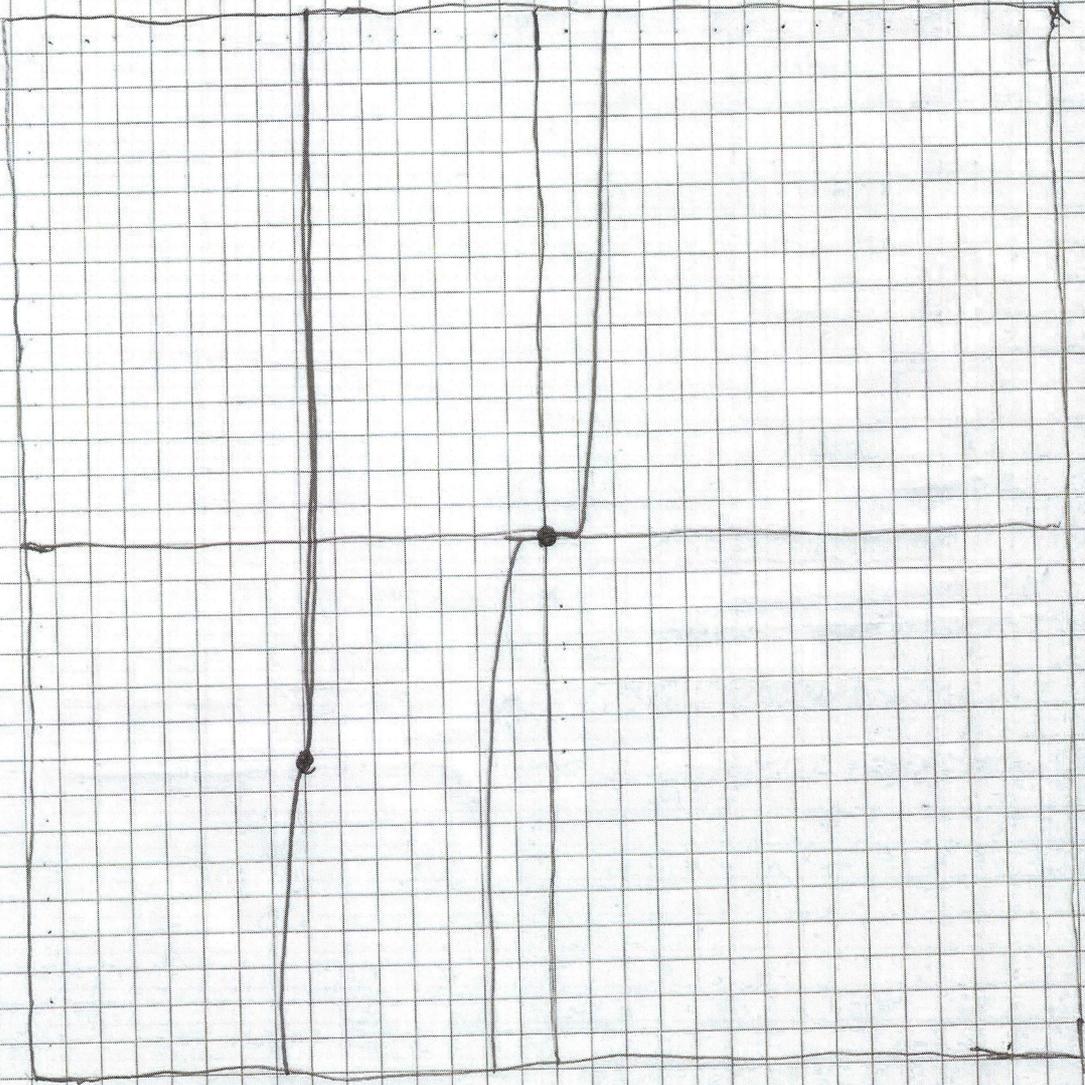
#6. $g(x) = 5(3x+2)^5 - 6$

parent function - $f(x) = x^5$

transformation - $g(x) = 5(3x+2)^5 - 6$

$a = 0$
 $h = 7$
 $k = 6$

stretched



x1.5

#17. $g(x) = 3(x+5) - 7$

$f(x) = x$

Slope intercept - $y = mx + b$

Vertical shift - $b = b_2 - b_1$

$b_1 = 0$

$b_2 = 8$

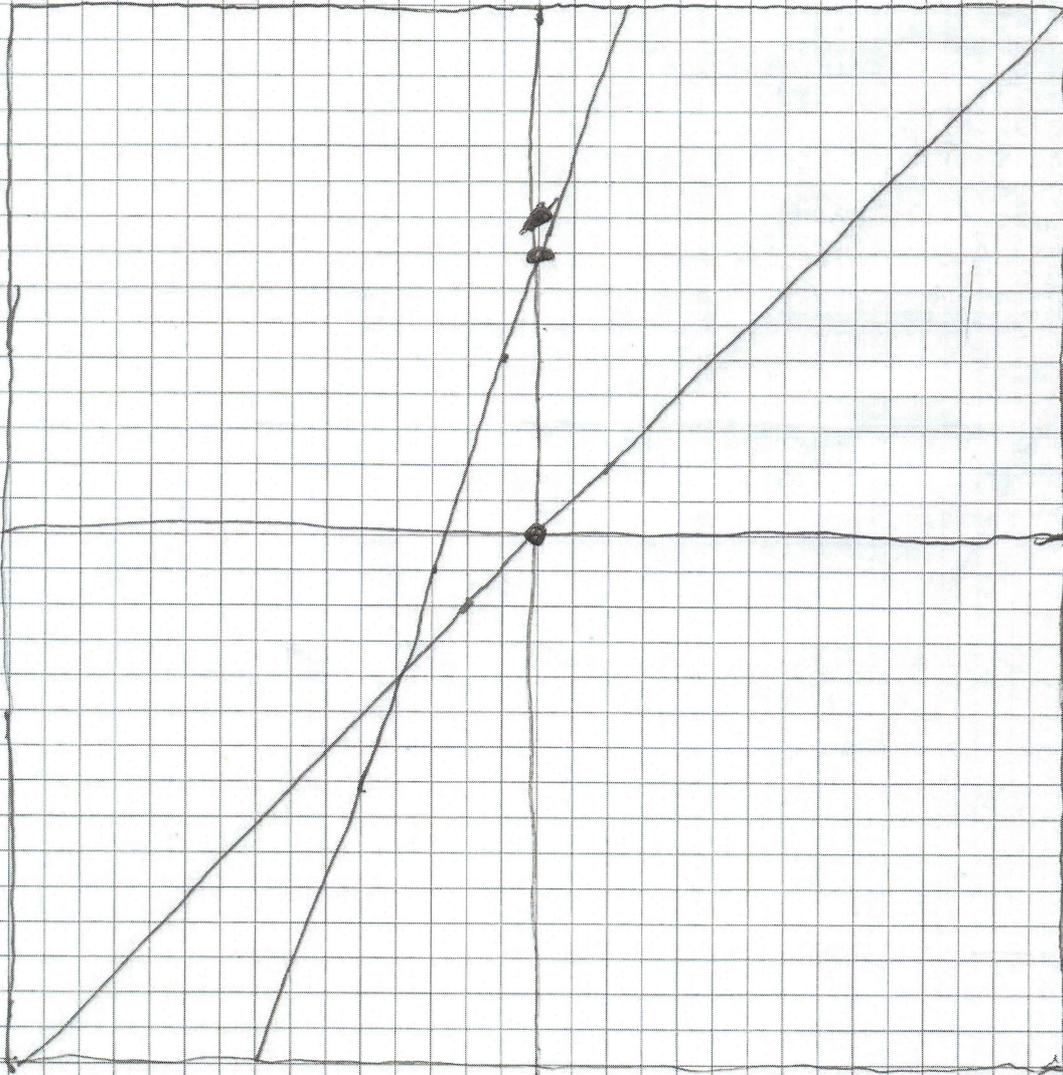
$b_2 - b_1 = 8$

$8 - 0 = 8$

vertical shift = 8

Slope - $m_1 = 1$
 $m_2 = 3$

vertically stretched



H.S

#8. $g(x) = 3(x+5)^2 - 7$

$f(x) = x^2$

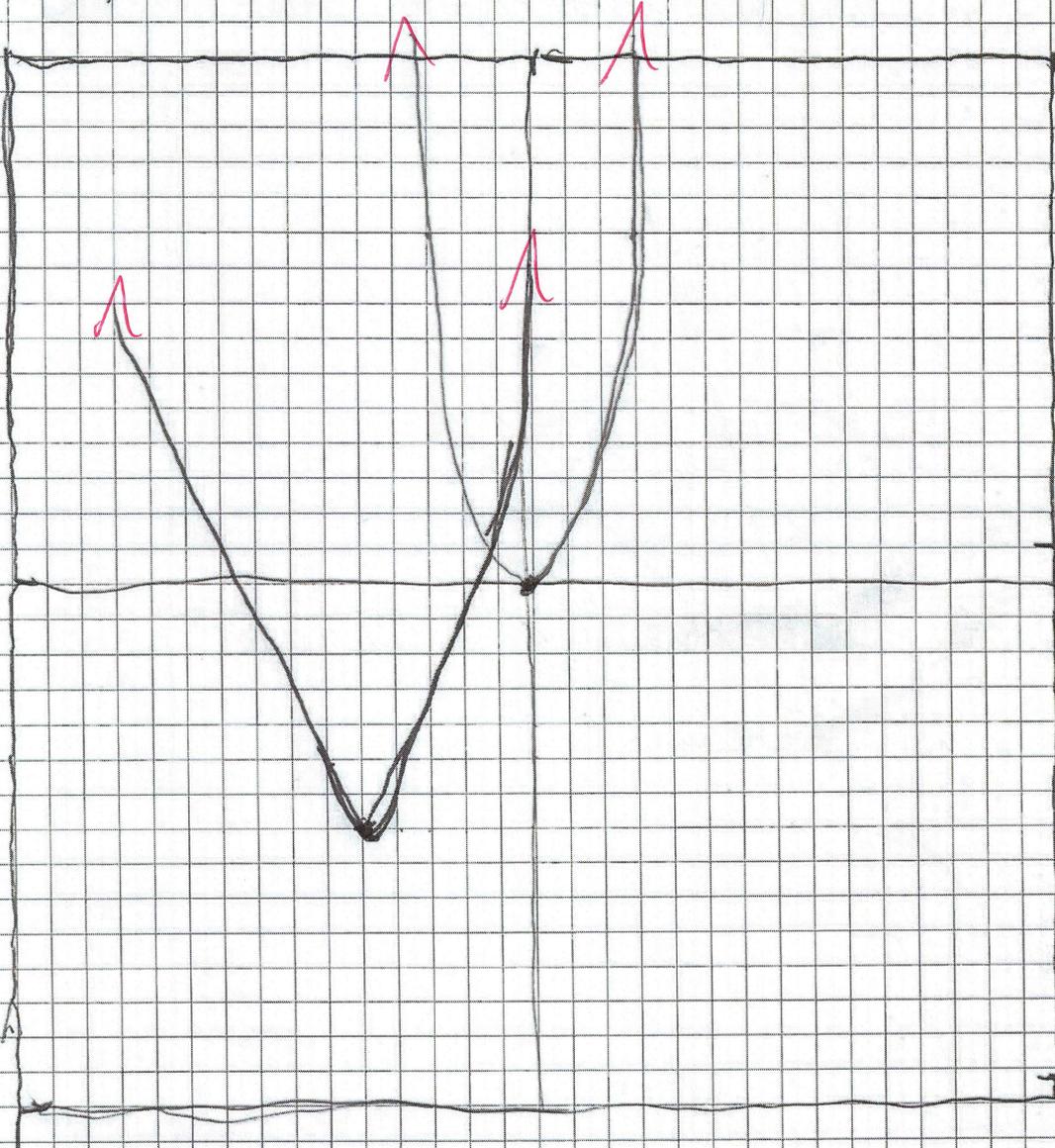
$g(x) = 3(x+5)^2 - 7$

horizontal shift - $g(x) = f(x+h)$

vertical shift - $g(x) = f(x) + k$

$a=3$
 $h=5$
 $k=-7$

vertically stretched



#9. $g(x) = x^2 - 4x - 7$

$f(x) = x^2$

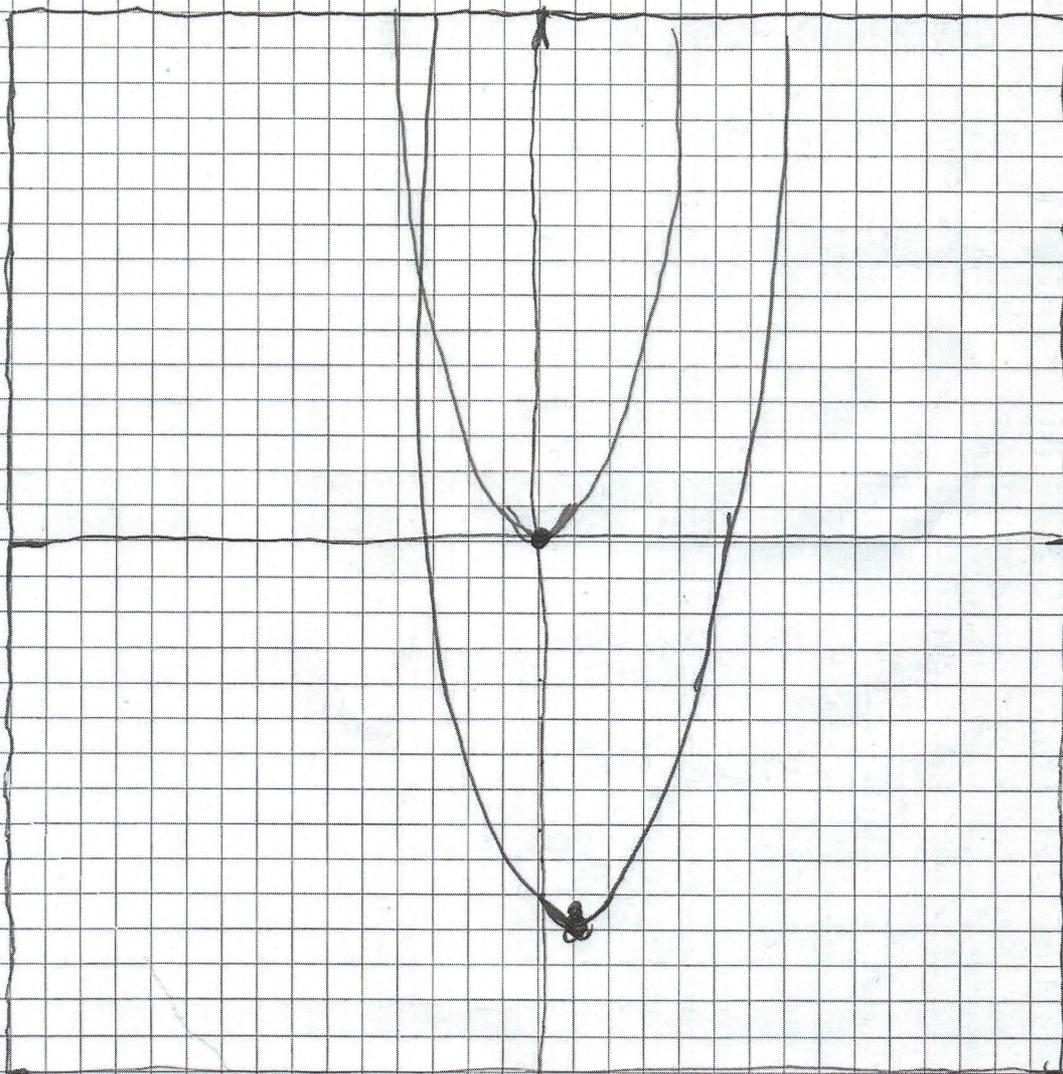
Transformation $g(x) = x^2 - 4x - 7$

horizontal shift - $g(x) = f(x+h)$
 $= 2$

vertical shift - $g(x) = f(x) + k$

no stretch $= 1$

$a = -4$
 $h = 2$
 $k = -7$



$$\#10. g(x) = 4x^2 + 5x + 17$$

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

$$g(x) = 4x^2 + 5x + 17$$

$$y = 4\left(x + \frac{5}{8}\right)^2 + \frac{2417}{16}$$

$$\text{horizontal shift} = 0.625$$

$$\text{vertical shift} = 15.438$$

vertically stretched

$$a = 4$$

$$h = 0.625$$

$$k = 15.438$$

