Day 3 HW

Warm Up!

V.S → vertical stretch/shrink

h.s. → horizontal stretch/shrink

Describe the transformation of each of the functions given below. List the transformations as they happen from left to right. Thank you for your attention.

1) $\frac{1}{3}\sqrt{-(x+2)}+4$

① ② ③ ④

① V. shrink 1/3
② flip over y-axis
③ left 2
④ up 4

2) $-\left|\frac{1}{2}(x+4)\right|-3$

① flip over y-axis ② h. stretch of 2 ③ left 4 ④ down 3

3) $-2(x+3)^2+9$

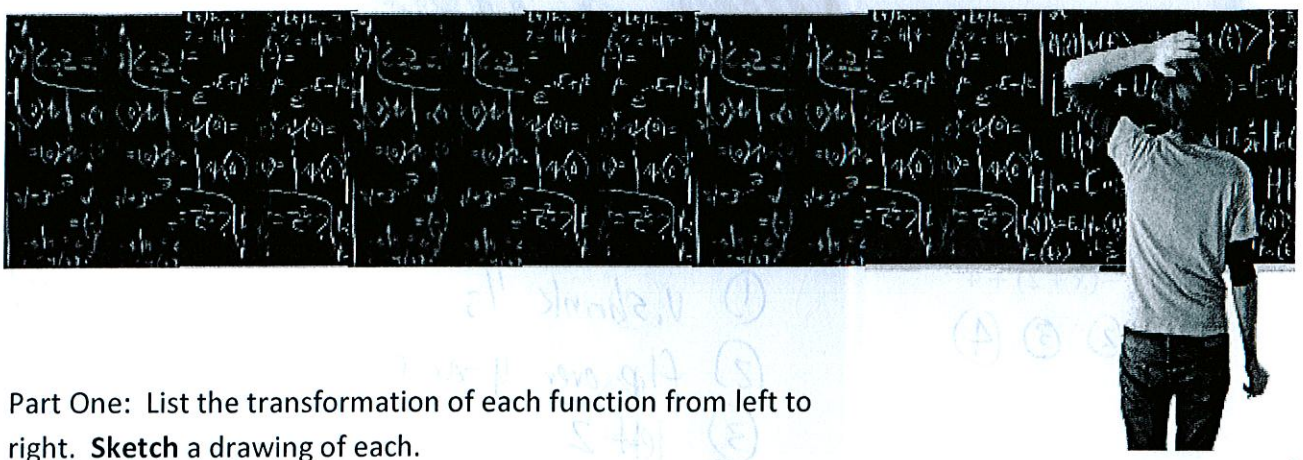
① flip over x-axis ② V. stretch of 2 ③ left 3 ④ up 9

4) $4(-(x-9))^3$

① v. stretch of 4 ② flip over y-axis ③ right 9

5) $-\frac{1}{2}\sqrt{-2(x+3)}+1$

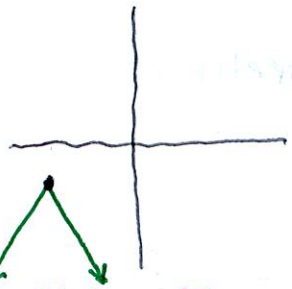
① flip over x-axis
② v. shrink of 1/2
③ flip over y-axis
④ horizontal shrink of 1/2
⑤ left 3
⑥ up 1



Part One: List the transformation of each function from left to right. **Sketch** a drawing of each.

1. $f(x) = -2|-(x+4)| - 2$

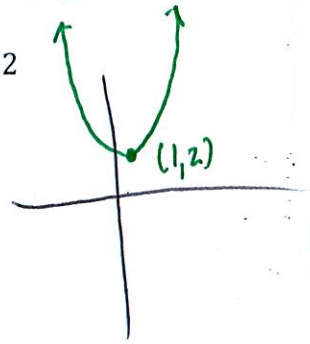
① flip over x-axis
② v. stretch of 2
③ flip over y-axis
④ left 4
⑤ down 2



Domain: $(-\infty, \infty)$ range $(-\infty, -2]$

2. $g(x) = \frac{1}{2}(3(x-1))^2 + 2$

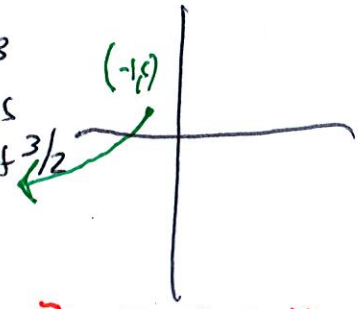
① v. shrink of 1/2
② h. shrink of 1/3
③ right 1
④ up 2



D: $(-\infty, \infty)$
R: $[2, \infty)$

3. $h(x) = -\frac{2}{3}\sqrt{-\frac{2}{3}(x+1)} + 1$

① flip over x-axis
② v. shrink of 2/3
③ flip over y-axis
④ horiz. stretch of 3/2
⑤ left 1
⑥ up 1

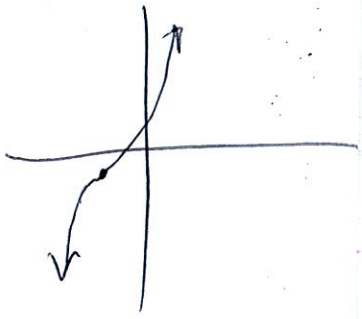


D: $(-\infty, -1]$ R: $(-\infty, 1]$

4. $t(x) = 3(2x+4)^3 - 1$ $3(2(x+2))^3 - 1$

① v. stretch of 3
② h. shrink of 1/2
③ left 2
④ down 1

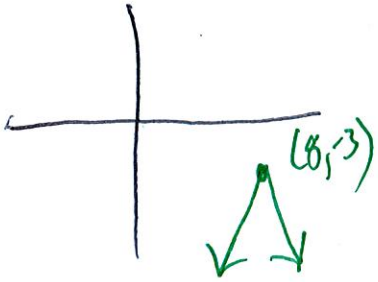
D, R: $(-\infty, \infty)$



5. $f(x) = -\frac{4}{5}\left|-\frac{1}{4}x + 2\right| - 3$

① flip over x-axis
② v. shrink of 4/5
③ flip over y-axis
④ h. stretch of 4
⑤ ~~left~~ right 8
⑥ down 3

$-\frac{4}{5}\left|-\frac{1}{4}(x-8)\right| - 3$



D: $(-\infty, \infty)$
R: $[-\infty, -3]$