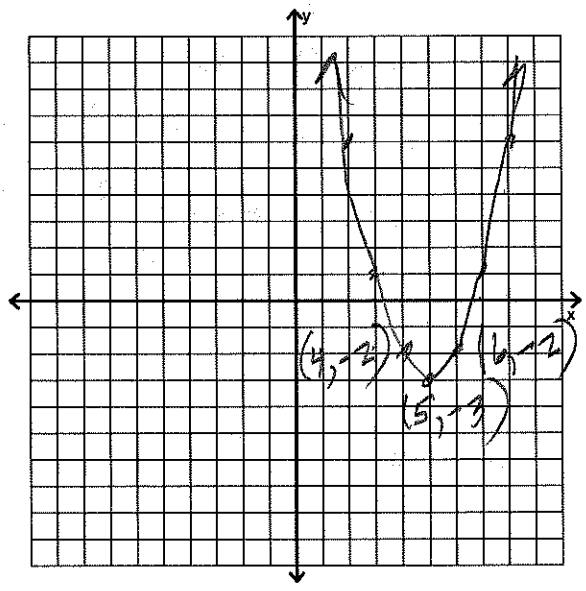
26) Sketch the best graph for $g(x)=(x-5)^2-3$. Be sure to indicate at least 3 critical points!



27 & 28

For numbers 6 & 7 Use the following: **IF:** $f(x)=-3(x+2)^2-1$

27) What is the value of $f(-4)$?

$f(-4) = -3(-4+2)^2 - 1$

$= -3(-2)^2 - 1 = -13$

28) Describe the transformation compared to $f(x)=x^2$.

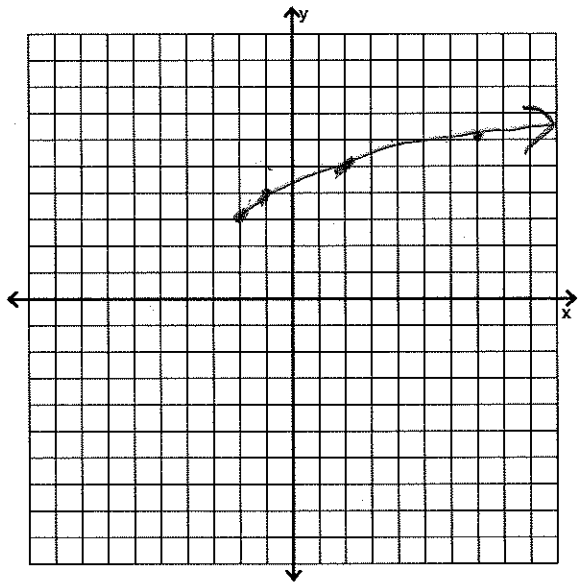
Down 1 vertical stretch by factor of 3

Left 2 Reflection over x-axis

29-33

Use the following function for numbers 8 – 12 $f(x)=\sqrt{x+2}+3$

29) Sketch the best graph for $f(x)$



30) What is the x-intercept?

None!

31) What is the y-intercept?

$y = \sqrt{0+2}+3 = \sqrt{2}+3$

$(0, \sqrt{2}+3)$

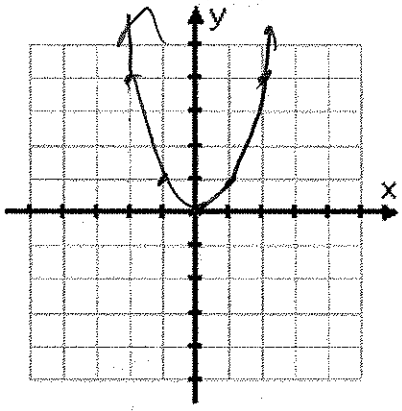
32) What is the domain?

$[-2, \infty)$

33) What is the range

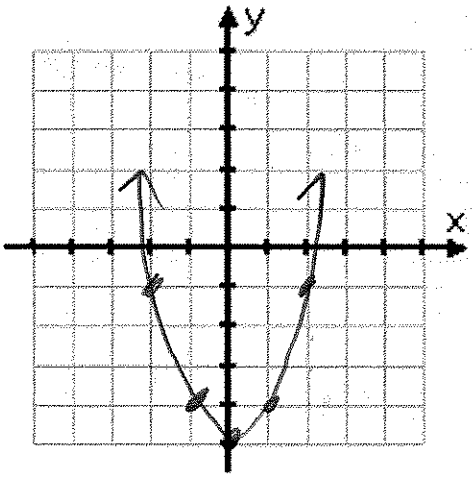
$[3, \infty)$

34) Graph the following "parent" function. $f(x)=x^2$

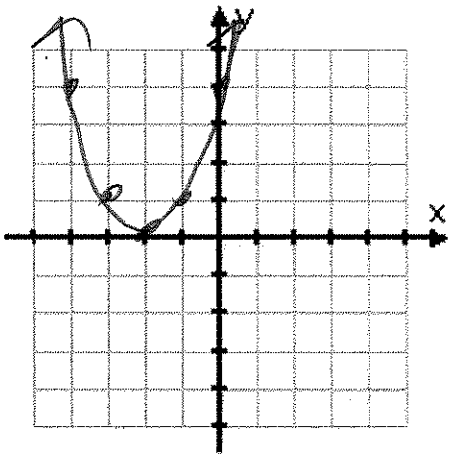


Now graph the following functions, which are transformations of the parent function above. **HINT**: In the first problem, $F(x)=f(x)-5$ is the same as $F(x)=x^2-5$. In the second problem, $G(x)=f(x+2)$ is the same as $G(x)=(x+2)^2$, and so on.

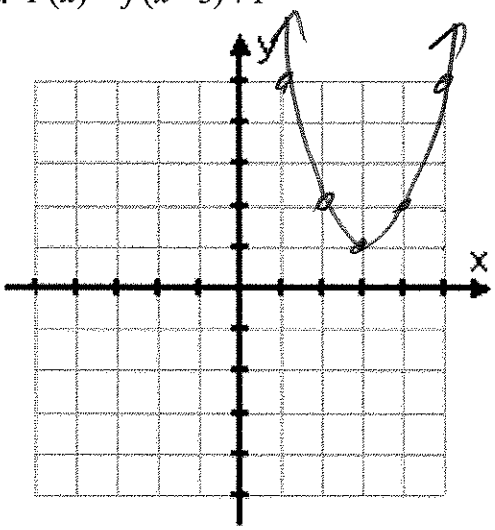
a. $F(x)=f(x)-5$



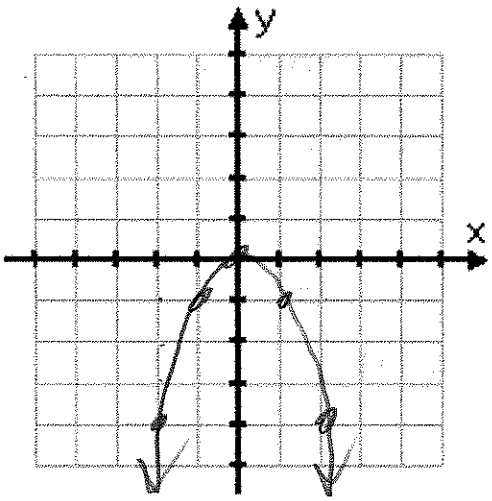
b. $G(x)=f(x+2)$



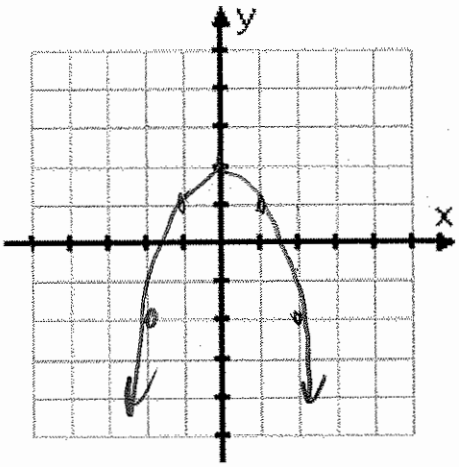
c. $P(x)=f(x-3)+1$



d. $K(x)=-f(x)$



e. $Q(x) = -f(x) + 2$



f. $H(x) = -f(x-3) + 2$