

Identify the important information and then graph the function.

1. $f(x) = -|x - 5| + 8$

Parent Function: $f(x) = |x|$

Transformations: flipped, right 5,
up 8

Domain: $(-\infty, \infty)$

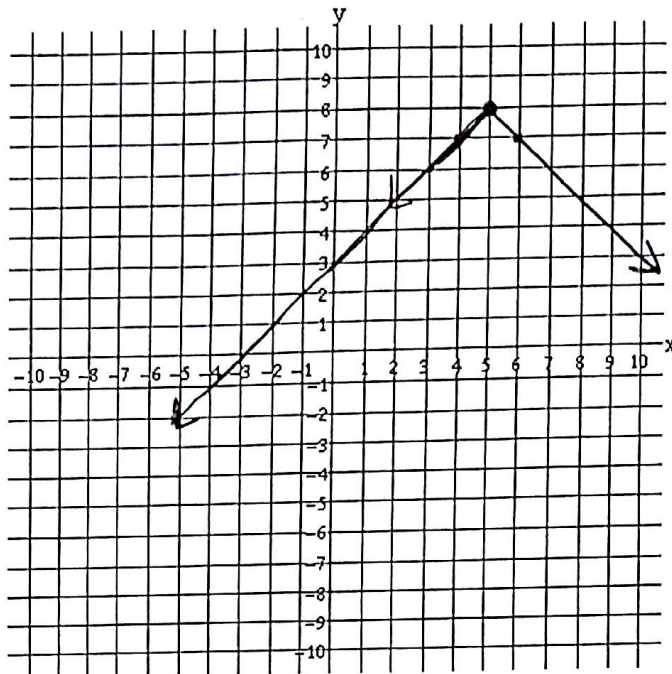
Range: $[8, -\infty)$

Relative Extrema: max (5, 8)

Increasing Interval(s): $(-\infty, 5)$

Decreasing Interval(s): $(5, \infty)$

End Behavior: $x \rightarrow \infty \quad f(x) \rightarrow -\infty$
 $x \rightarrow -\infty \quad f(x) \rightarrow -\infty$



2. $f(x) = 4|x + 2| - 6$

Parent Function: $f(x) = |x|$

Transformations: stretch 4,
left 2, down 6

Domain: $(-\infty, \infty)$

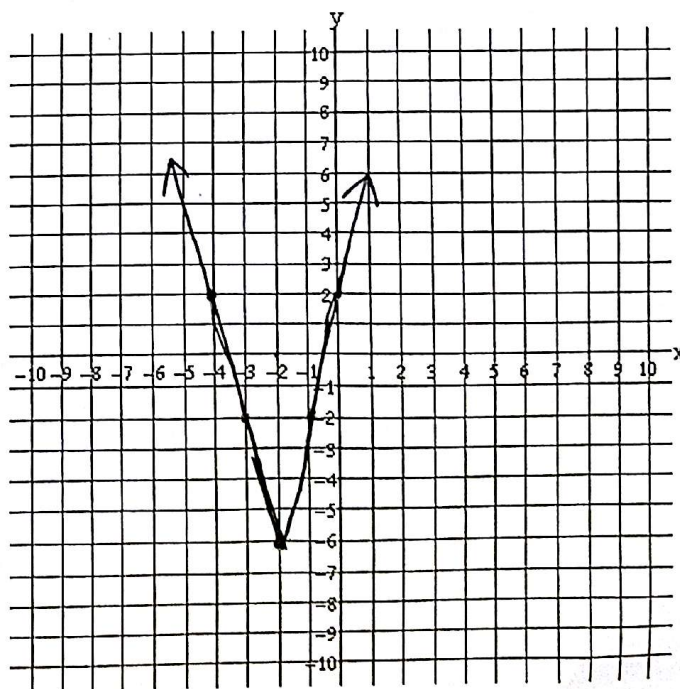
Range: $[-6, \infty)$

Relative Extrema: min (-2, -6)

Increasing Interval(s): $(-2, \infty)$

Decreasing Interval(s): $(-\infty, -2)$

End Behavior: $x \rightarrow \infty \quad f(x) \rightarrow \infty$
 $x \rightarrow -\infty \quad f(x) \rightarrow \infty$



3. $f(x) = -\frac{1}{2}x - 4$

Parent Function: $f(x) = x$

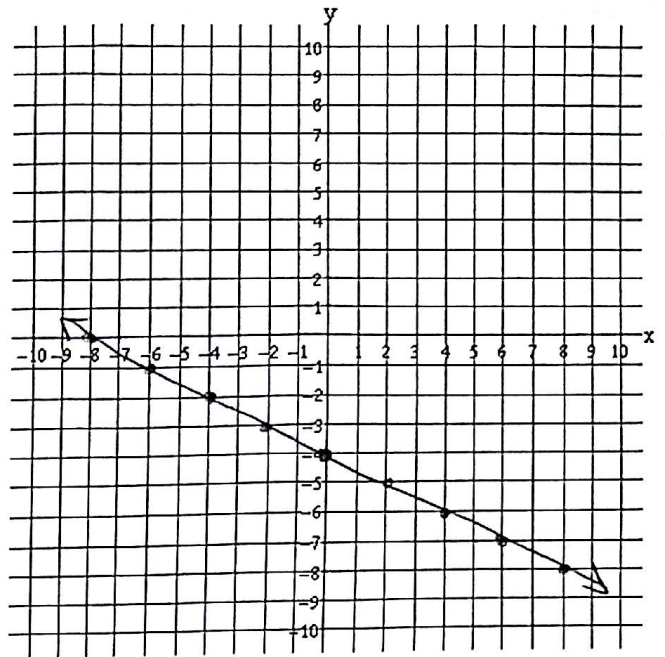
Slope: $-\frac{1}{2}$

y-intercept: -4

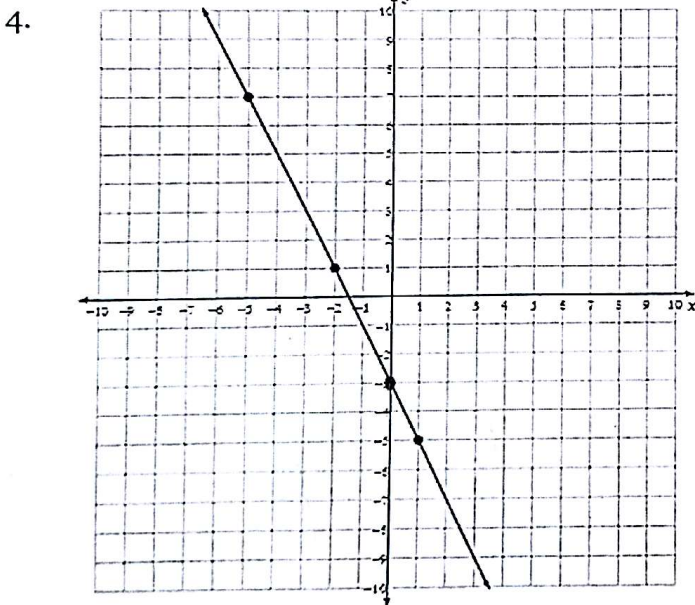
Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

End Behavior: $x \rightarrow \infty$ $f(x) \rightarrow -\infty$
 $x \rightarrow -\infty$ $f(x) \rightarrow \infty$

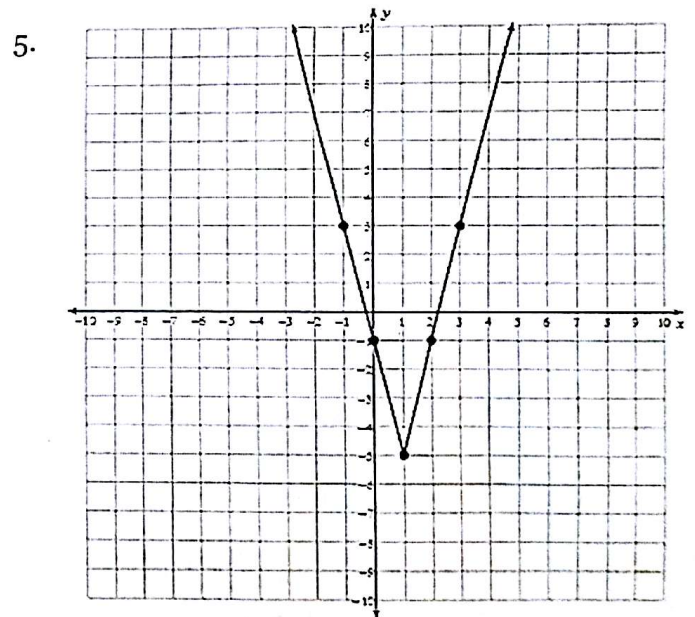


Name the parent function of each graph and then write the equation.



Parent Function: linear $f(x) = x$

$f(x) =$ $-2x - 3$



Parent Function: absolute value $f(x) = |x|$

$g(x) =$ $4|x - 2| - 5$