

Show your work for full credits.

1. Describe transformations from $y = x^2$ to $y = x^2 - 4x + c$.

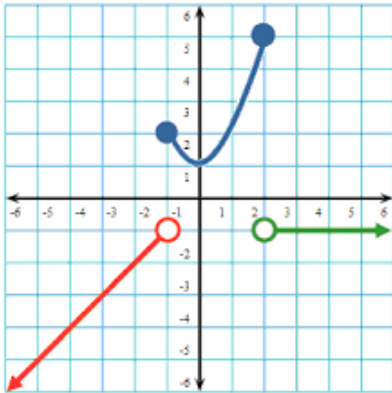
2. For every real number x , $[x]$ denotes the greatest integer less than or equal to x . Find all values of x in the interval $2 \leq x < 5$ that satisfy $[x]^2 = [x^2]$.

3. Sketch

$$f(x) = \begin{cases} x^2 + 2x, & x \leq -1 \\ x, & -1 < x \leq 1 \\ -1, & x > 1 \end{cases}$$



4. Write a formula for the graph of the given piecewise function



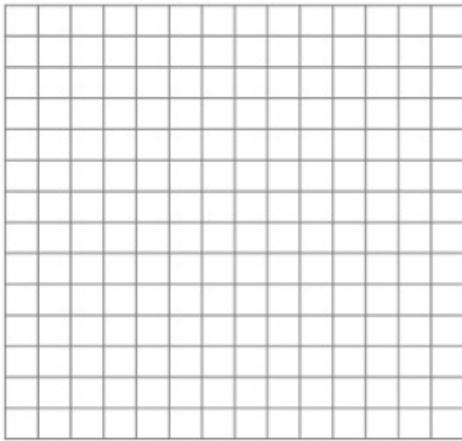
5. Solve for x .

$$|x| - |x + 4| < 3$$

6. Solve for x .

$$\frac{2x - 3}{x + 1} \leq 1$$

7. Find the area enclosed by the graph of $|x| + |y + 2| = 4$.
(Sketch is optional)



8. Find an inequality involving an absolute value that describes $-5 \leq x \leq 21$.

9. Let $g(x) = g(-x)$ and $h(x) = -h(-x)$.
Show that $f(x)$ is even, odd, or neither.

$$f(x) = -x^2 + 3g(x)$$