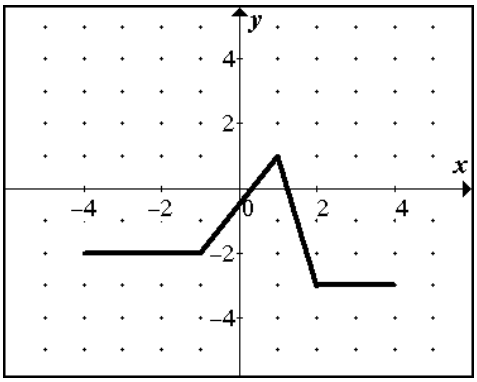
Transformations of Functions

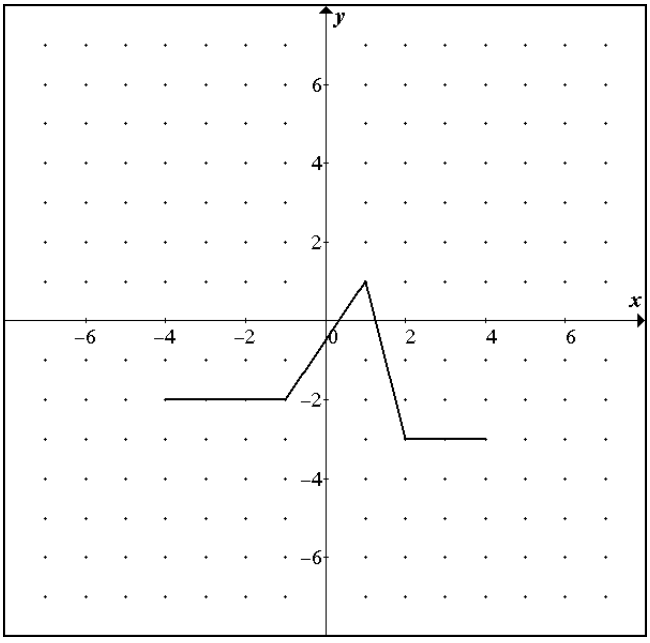
Date:

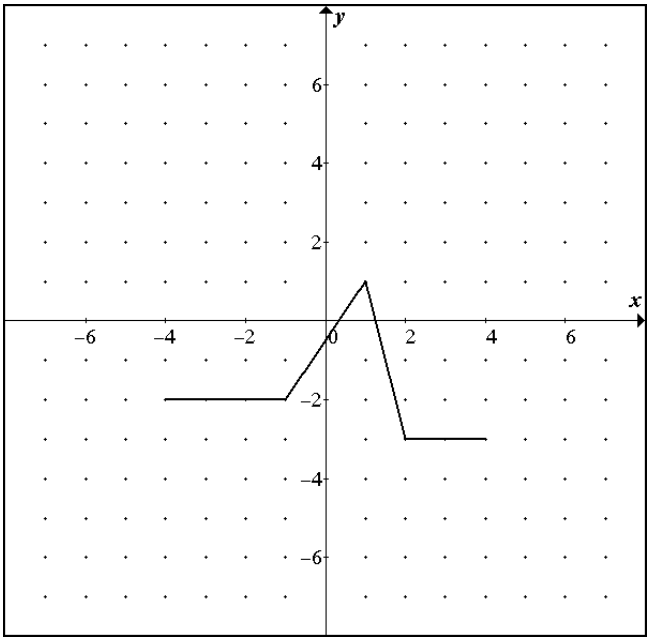
1. Define $y = f(x)$ as a piecewise function:

$$f(x) = \begin{cases} \\ \\ \\ \end{cases}$$



2. For the given function $y = f(x)$, sketch the transformed functions (5 functions per set of axes).





a) $y = f(x+1)-1$ b) $y = f(-x)-2$ c) $y = -f(x)$ d) $y = -2f(x)$ e) $y = f(x-2)$

f) $y = -f(x-1)+1$ g) $y = f(-x)$ h) $y = f(2x)$ i) $y = \frac{1}{2} f(2x)$ j) $y = f(2x+4)$

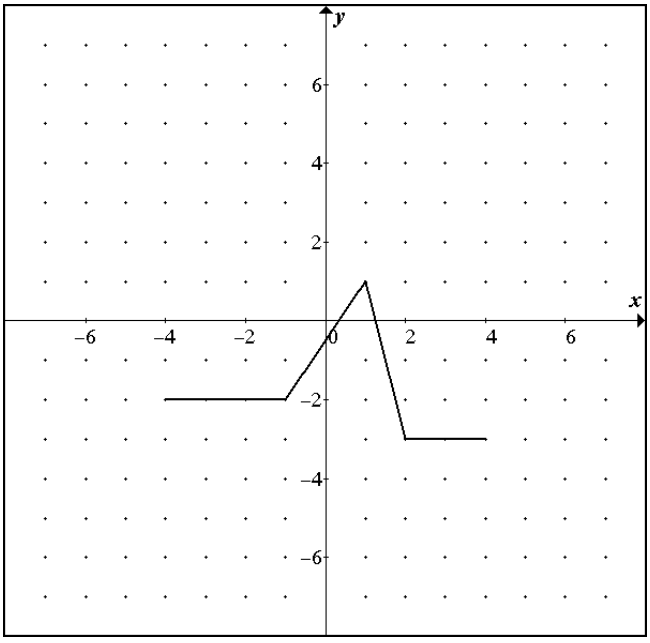
k) $y = -f(x)+2$

l) $y = -f(-2x)$

m) $y = f(\frac{1}{2}x)$

n) $y = f(-x-1)$

o) $y = f(-x)+2$



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3. State the values of *a*, *k*, *p* and *q* and sketch the following functions. Graph five or six functions on the same set of axes provided for your graphs, so labels and highlights are imperative.

$a(x) = 2\sqrt{x-1}$

a = **k =** **p =** **q =**

$b(x) = -\dfrac{1}{x+2}$

a = **k =** **p =** **q =**

$c(x) = 2\sqrt{-x}$

a = **k =** **p =** **q =**

$d(x) = (x+2)^3 - 1$

a = **k =** **p =** **q =**

$e(x) = -(x-1)^3$

a = **k =** **p =** **q =**

$f(x) = \sqrt{2x-6} - 1$

a = **k =** **p =** **q =**

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

a = **k =** **p =** **q =**

$h(x) = \dfrac{1}{x+1} + 3$

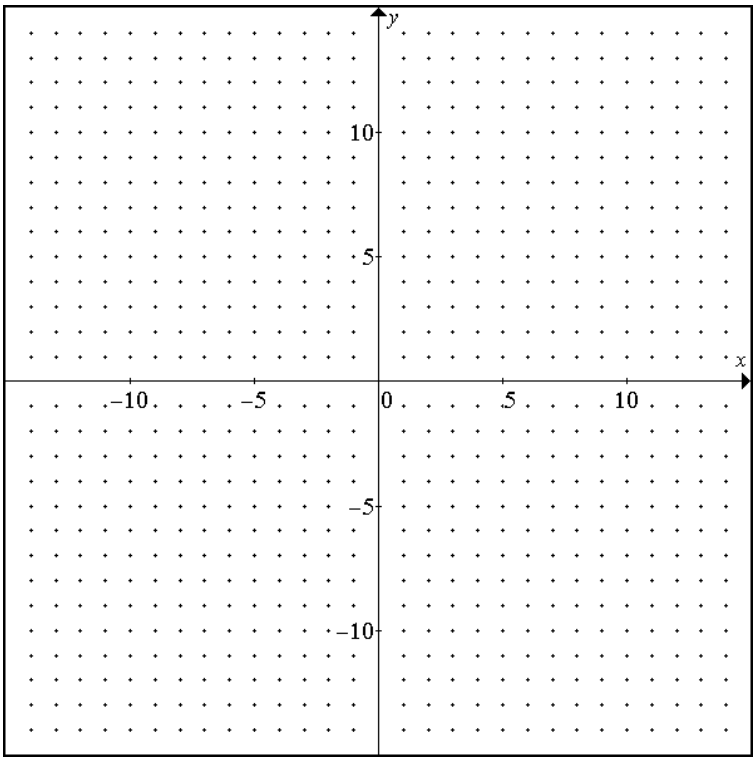
a = **k =** **p =** **q =**

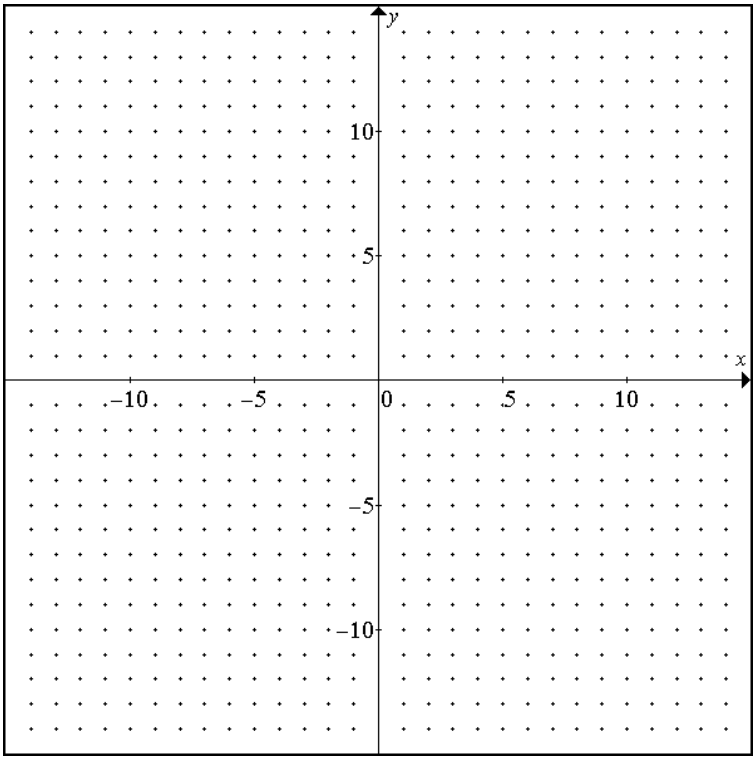
$i(x) = -3|x+3|$

a = **k =** **p =** **q =**

$j(x) = \dfrac{1}{2}(x-2)^3$

a = **k =** **p =** **q =**





Transformations of Functions

Date:

$k(x) = 2|x+3|-1$

a = **k =** **p =** **q =**

$l(x) = -\sqrt{-(x-4)}$

a = **k =** **p =** **q =**

$m(x) = \dfrac{-1}{x+3}$

a = **k =** **p =** **q =**

$n(x) = \sqrt{3x}+2$

a = **k =** **p =** **q =**

$o(x) = (x+3)^3 - 2$

a = **k =** **p =** **q =**

$p(x) = -3|x-2|$

a = **k =** **p =** **q =**

$q(x) = 2|x|$

a = **k =** **p =** **q =**

$r(x) = |2x|$

a = **k =** **p =** **q =**

$s(x) = -(x-3)^3$

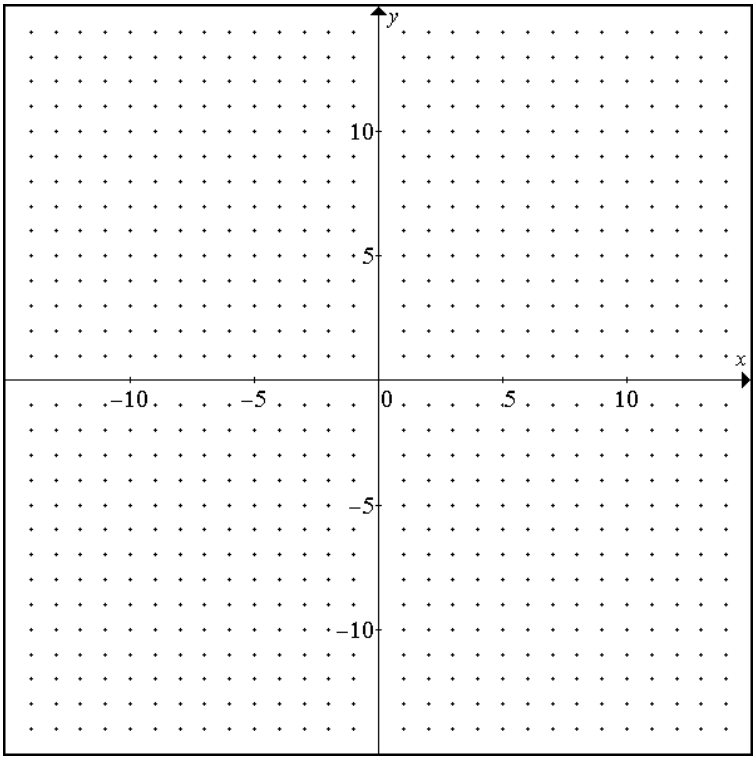
a = **k =** **p =** **q =**

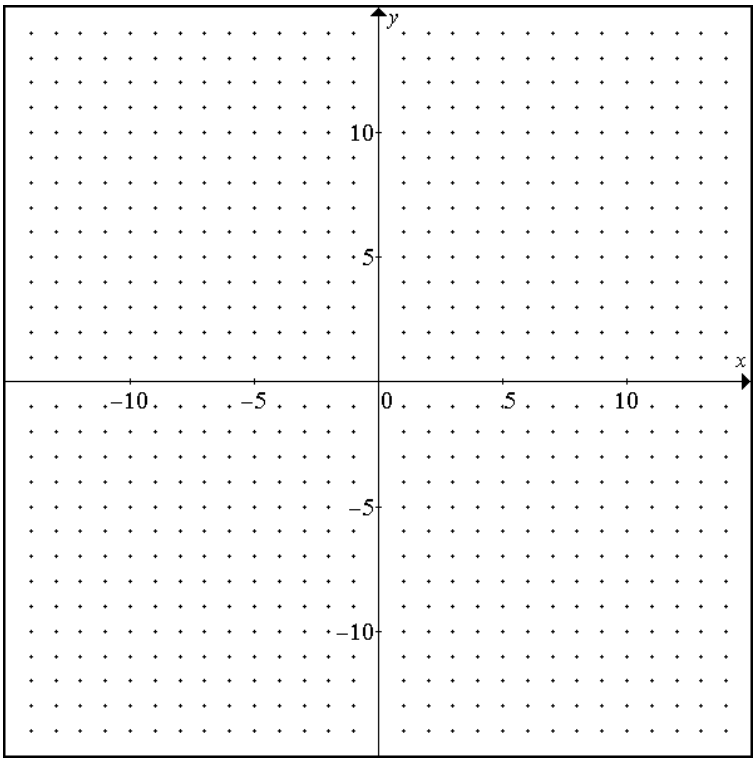
$t(x) = -3\sqrt{2(x-1)}$

a = **k =** **p =** **q =**

$u(x) = 2\sqrt{3x+6}+1$

a = **k =** **p =** **q =**





$v(x) = -\dfrac{1}{4-x}+2$

a = **k =** **p =** **q =**