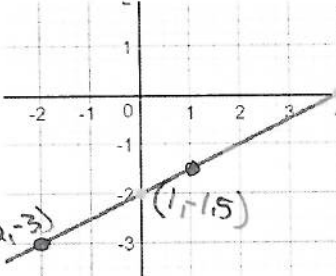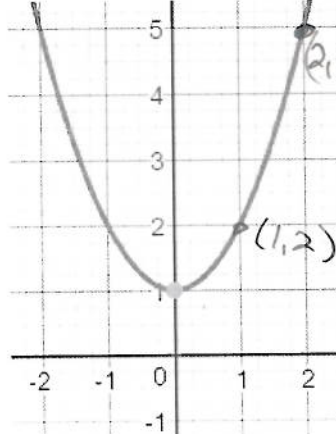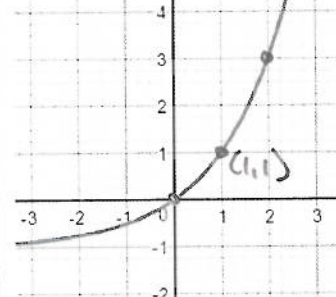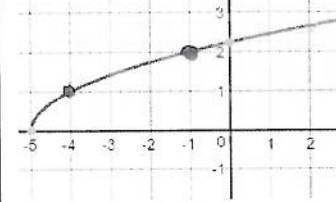# Evaluating Functions

Evaluate each of the empty boxes based on the examples.

$f(x) = 7x^2 + 1$	Example: Evaluate f(1). $f(1) = 7(1)^2 + 1$ $f(1) = 7(1) + 1$ $f(1) = 7 + 1$ $f(1) = 8$	Example: Evaluate f(-2). $f(-2) = 7(-2)^2 + 1$ $f(-2) = 7(4) + 1$ $f(-2) = 28 + 1$ $f(-2) = 29$	Evaluate f(3). $f(3) = 7(3)^2 + 1$ $f(3) = 64$
$g(x) = 3x + 8$	Example: Evaluate g(2). $g(2) = 3(2) + 8$ $g(2) = 6 + 8$ $g(2) = 14$	Evaluate g(1). $g(1) = 3 \cdot 1 + 8$ $g(1) = 12$	Evaluate g(-4). $g(-4) = 3(-4) + 8$ $g(-4) = -4$
$h(n) = \dfrac{3}{n-5}$	Example: Evaluate h(1). $h(1) = \dfrac{3}{(1)-5}$ $h(1) = \dfrac{3}{-4}$ $h(1) = -\frac{3}{4}$	Evaluate h(-3). $h(-3) = \dfrac{3}{(-3)-5}$ $h(-3) = -\frac{3}{8}$	Evaluate h(2). $h(2) = \dfrac{3}{2 \cdot 5}$ $h(2) = \dfrac{3}{-3} = -1$
$p(t) = \sqrt{3t - 1}$	Example: Evaluate p(2). $p(2) = \sqrt{3(2) - 1}$ $p(2) = \sqrt{6 - 1}$ $p(2) = \sqrt{5}$	Evaluate p(1). $p(1) = \sqrt{3 \cdot 1 - 1}$ $p(1) = \sqrt{3 - 1}$ $p(1) = \sqrt{2}$	*Evaluate p(-1). $p(-1) = \sqrt{3(-1) - 1}$ $p(-1) = \sqrt{-3 - 1}$ $p(-1) = \cancel{...}$ undefined
$s(x) = 5x - 1$	Evaluate s(2). $s(2) = 5(2) - 1$ $s(2) = 9$	Evaluate s(-3). $s(-3) = 5(-3) - 1$ $s(-3) = -16$	Evaluate s(½). $s(\frac{1}{2}) = 5(\frac{1}{2}) - 1$ $s(\frac{1}{2}) = \frac{5}{2} - \frac{2}{2}$ $s(\frac{1}{2}) = \frac{3}{2}$
$r(n) = \sqrt{3n + 1}$	Evaluate r(1). $r(1) = \sqrt{3(1) + 1}$ $r(1) = \sqrt{4}$ $r(1) = 2$	Evaluate r(7). $r(7) = \sqrt{3 \cdot 7 + 1}$ $r(7) = \sqrt{22}$	*Evaluate r(-2). $r(-2) = \sqrt{3(-2) + 1}$ $r(-2) = \sqrt{-5}$ undefined!

Each of the graphs represent the functions labeled above them. Evaluate each of the empty boxes and label the graph.

t(x)	Example: Evaluate t(1). Find 1 on the x-axis and move to the line to find the y-value. t(1) = -1.5 (1,-1.5)	Evaluate t(-2). $t(-2) = -3$ (-2,-3)	Example: When is t(x) = -1? t(x) = -1 when x = 2. Find -1 on the y-axis and move to the line to find the x-value.
(graph of t(x), line with points (-2,-3) and (1,-1.5))			
q(x)	Evaluate q(1). $q(1) = 2$ (1,2)	Evaluate q(2). $q(2) = 5$	*When is q(x) = 5? $q(x) = 5$ when x = 2 and x = -2
(graph of q(x), parabola with points (1,2) and (2,5))			
v(x)	Evaluate v(1). $v(1) = 1$	When is v(x) = 3? $v(x) = 3$ when x = 2	When is v(x) = 0? when x = 0
(graph of v(x), exponential curve with point (1,1))			
w(x)	Evaluate w(-4). $w(-4) = 1$	Evaluate w(-5). $w(-5) = 0$	When is w(x) = 2? when x = -1
(graph of w(x), square root curve)			