

GSE Algebra I

Comparing and Contrasting Graphs

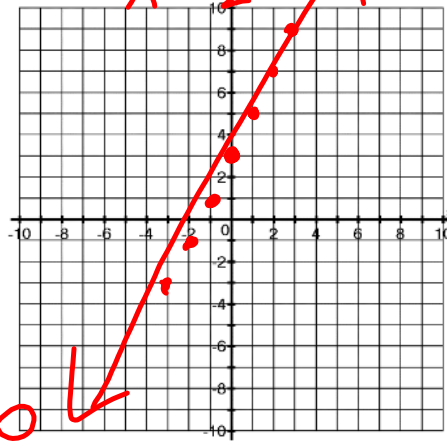
$0 = 2x + 3$

Name _____

Graph the following functions to find the similarities and differences between their characteristics.

$f(x) = 2x + 3$

x	f(x)



Type of Function: Linear

Domain: \mathbb{R}

Range: \mathbb{R}

X-Int: $-3/2$ Y-Int: 3

Asymptote: no

End Behavior: As $x \rightarrow -\infty$, $y \rightarrow -\infty$
As $x \rightarrow +\infty$, $y \rightarrow +\infty$

Rate of change for $-2 \leq x \leq 0$: 2

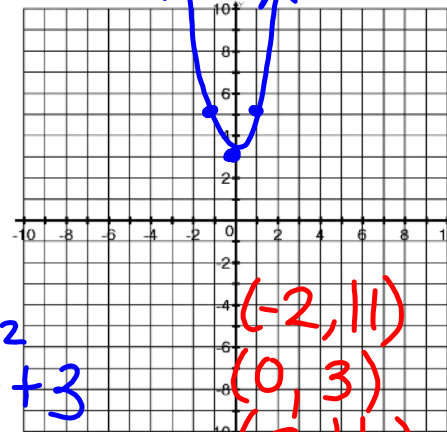
Rate of change for $0 \leq x \leq 2$: 2

$y = mx + b$

v.f.

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

x	g(x)



Type of Function: Quadratic

Domain: \mathbb{R}

Range: $y \geq 3$

X-Int: no Y-Int: 3

Asymptote: no

End Behavior: As $x \rightarrow -\infty$, $y \rightarrow +\infty$
As $x \rightarrow +\infty$, $y \rightarrow +\infty$

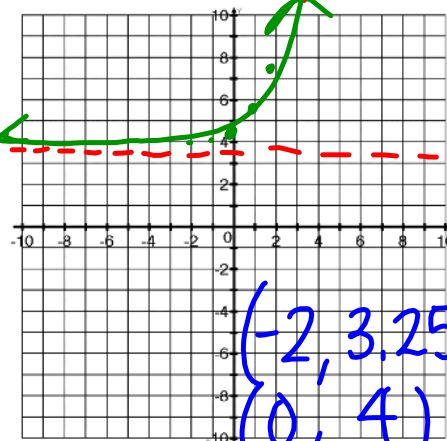
Rate of change for $-2 \leq x \leq 0$: $8/2 = 4$

Rate of change for $0 \leq x \leq 2$: 4

$y = 2(x-0)^2 + 3$

$h(x) = 2^x + 3$

x	h(x)
-2	3.25
-1	3.5
0	4
1	5
2	7



Type of Function: Exp.

Domain: \mathbb{R}

Range: $y > 3$

X-Int: no Y-Int: 4

Asymptote: $y = 3$

End Behavior: As $x \rightarrow -\infty$, $y \rightarrow 3$
As $x \rightarrow +\infty$, $y \rightarrow +\infty$

Rate of change for $-2 \leq x \leq 0$: $3/2$

Rate of change for $0 \leq x \leq 2$: $3/2$

$(-2, 3.25)$
 $(0, 4)$
 $(2, 7)$