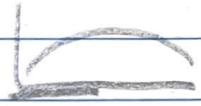
2.1

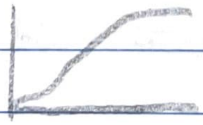
(1a) X: Hours worked Y: Money made
The amount of money made changes based on how much they worked

(1c) X: Time Y: Temp of milk
The temp of the milk changes the longer it is out.

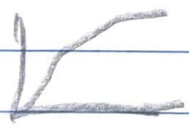
(1d) X: Day Y: Sunlight
There can be more than one day that has the same amount of sunlight, but you cant determine the day based off of the sunlight.



(1i) X: Age Y: Height
The age of someone determines how tall someone is



(1j) X: Age Y: Vocab size
As someone ages, they learn new words



③ $f(x) = 3x - 1$

$f(4) = 3(4) - 1$ $\quad 4 = 3x - 1$

$12 - 1$ $\quad 5 = 3x$

$f(4) = 11$ $\quad x = \frac{5}{3}$

$f(2x) = 6x - 1$ $\quad 2f(x) = 6x - 2$ $\quad f(x+2) = 3x + 5$

$f(x) + 1 = 3x - 1 + 1$

$= 3x$

④ $g(x) = x^2 - x$

$g(a) = a^2 - a$ $\quad 6 = x^2 - x$

$x = 3$

$g(\frac{1}{x}) = \frac{1}{x^2} - \frac{1}{x}$ $\quad \frac{1}{g(x)} = \frac{1}{x^2 - x}$ $\quad g(x) - 1 = x^2 - x - 1$

⑤ $f(x) = x^2 + x$

$f(x+1) = (x+1)^2 + (x+1)$ $\quad 2f(x) - 3 = 2(x^2 + x) - 3$

$= x^2 + 2x + 1 + x + 1$ $\quad f(x) = 2x^2 + 2x - 3$

$= x^2 + 3x + 2$

$f(0.5x) = 0.5x^2 + 0.5x$ $\quad f(\frac{1}{x}) = \frac{1}{x^2} + x$

$f(|x|) = |x|^2 + |x|$ $\quad f(x+h) = (x+h)^2 + (x+h)$

$x^2 + h^2 + 2xh + x + h$

(a) $y = f(x-4)$ (b) $y = 3g(x)$
(c) $y = f(x)+5$ (d) $y = g(x-1)$
(e) $y = 2 + 7f(x)$ (f) $y = \frac{1}{6}g(x)$

Handout 6

(1) (a) Yes (b) No

(2) (a) Input: Area Output: Gallons
(b) Input: $1000\,ft^2$ Output: 12 Gallons