$x_1, x_2, \ldots, x_n$

$$\bar{x} = \frac{\sum x}{n}$$

x	f
x_1	f_1
x_2	f_2
$\vdots$	$\vdots$
x_n	f_n

x	f
1	7
2	9
3	6

$$\bar{x} = \frac{\sum xf}{\sum f}$$

1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2

2, 2, 3, 3, 3, 3, 3, 3

$$\bar{x} = \frac{\int xf}{\int f}$$

$$\bar{y} = \frac{\int yg}{\int g}$$

Need 1-to-1 to handle both.

$g(y)$ is the inverse of f.

$f(x) = 3x+2 \overset{\text{SET}}{=} y$

Solve for x:

$3x+2 = y$

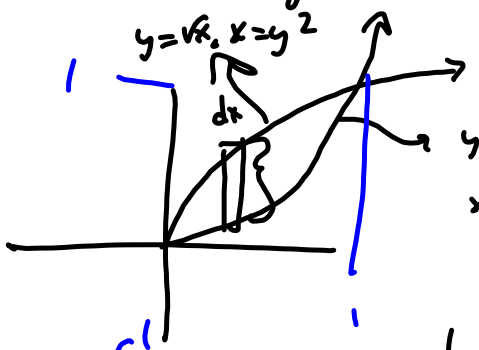
$3x = y-2$

$x = \frac{1}{3}(y-2)$ is the $g(y)$.

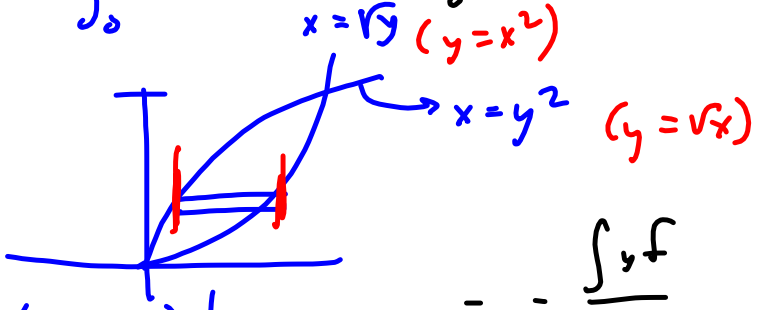
$\boxed{x = g(y)}$

$y = x^2$ ← $x = \sqrt{y}$

$y = \sqrt{x}$ $\quad x = y^2 \Rightarrow y = \pm\sqrt{x}$ want the +, obviously.



$$\bar{x} = \frac{\int_0^1 x\, f(x)}{\int_0^1 f(x)\,dx} \qquad \frac{\int_0^1 x\left(\sqrt{x} - x^2\right) dx}{\int_0^1 \left(\sqrt{x} - x^2\right) dx}$$



$$\bar{y} = \frac{\int_0^1 y\left(\sqrt{y} - y^2\right) dy}{\int_0^1 \left(\sqrt{y} - y^2\right) dy}$$

$$\bar{y} = \frac{\int y f}{\int f}$$

Centroid $= (\bar{x}, \bar{y})$

$$\frac{4}{7} = \frac{1+1+1+1}{2+1+1+3} = \frac{1}{2} + 1 + 1 + \frac{1}{3}$$

$$\frac{\sum_{k=1}^{n} A_k}{\sum_{k=1}^{n} B_k}$$