Calculus 1 Workbook

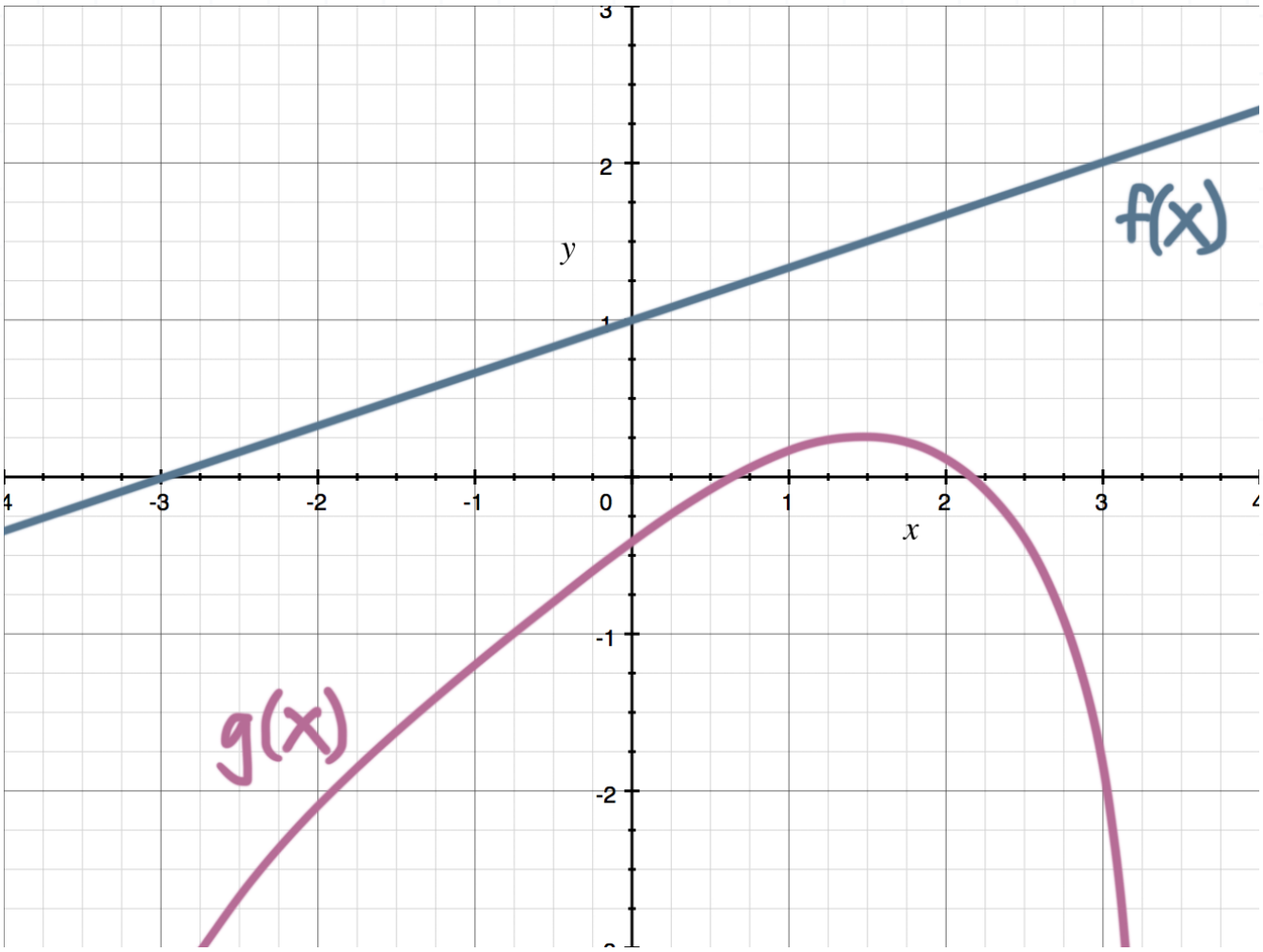
Combinations and composites

krista king MATH

LIMITS OF COMBINATIONS

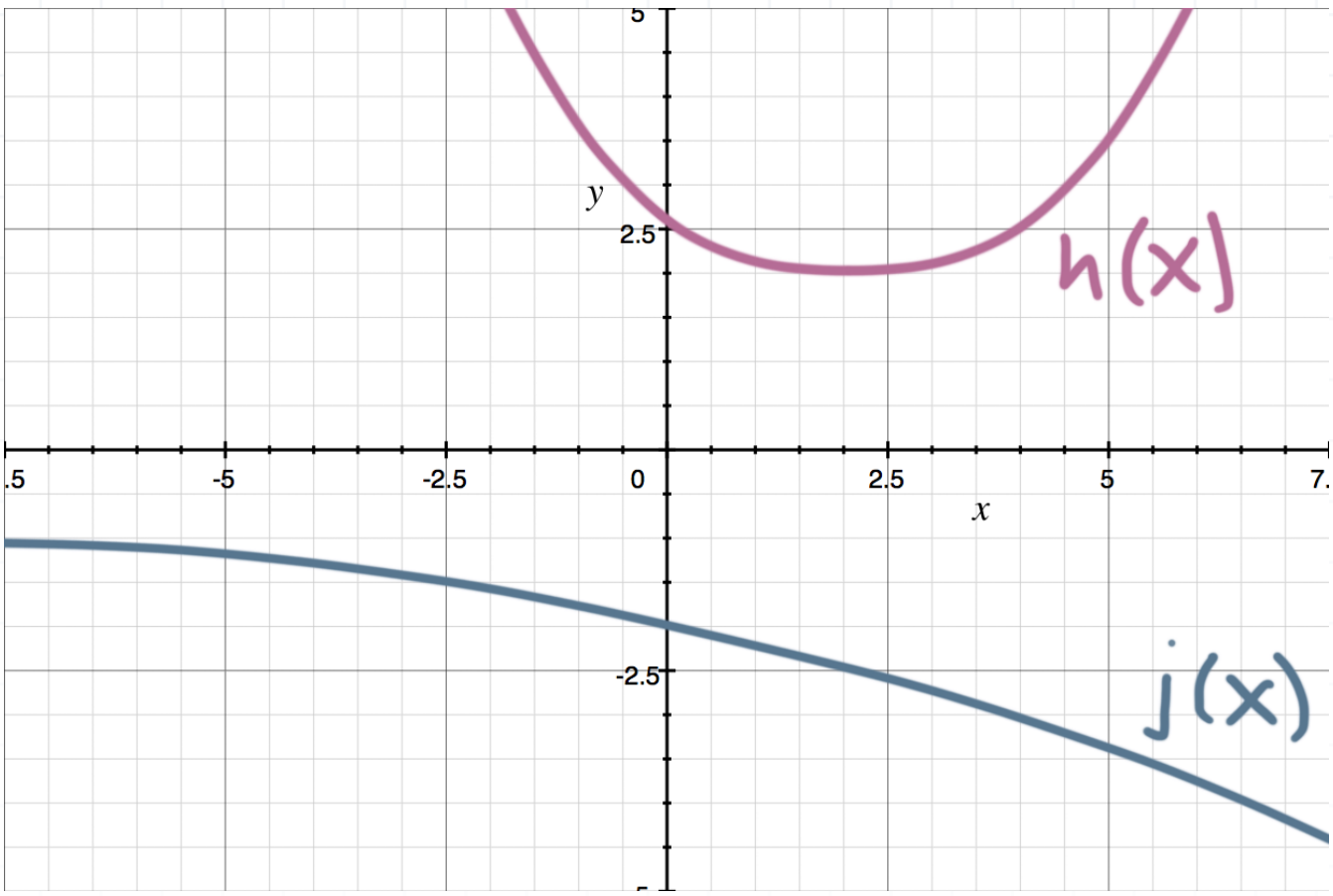
■ 1. Use limit laws and the graph below to evaluate the limit.

$$\lim_{x\to 3}\left[4f(x)-3g(x)\right]$$



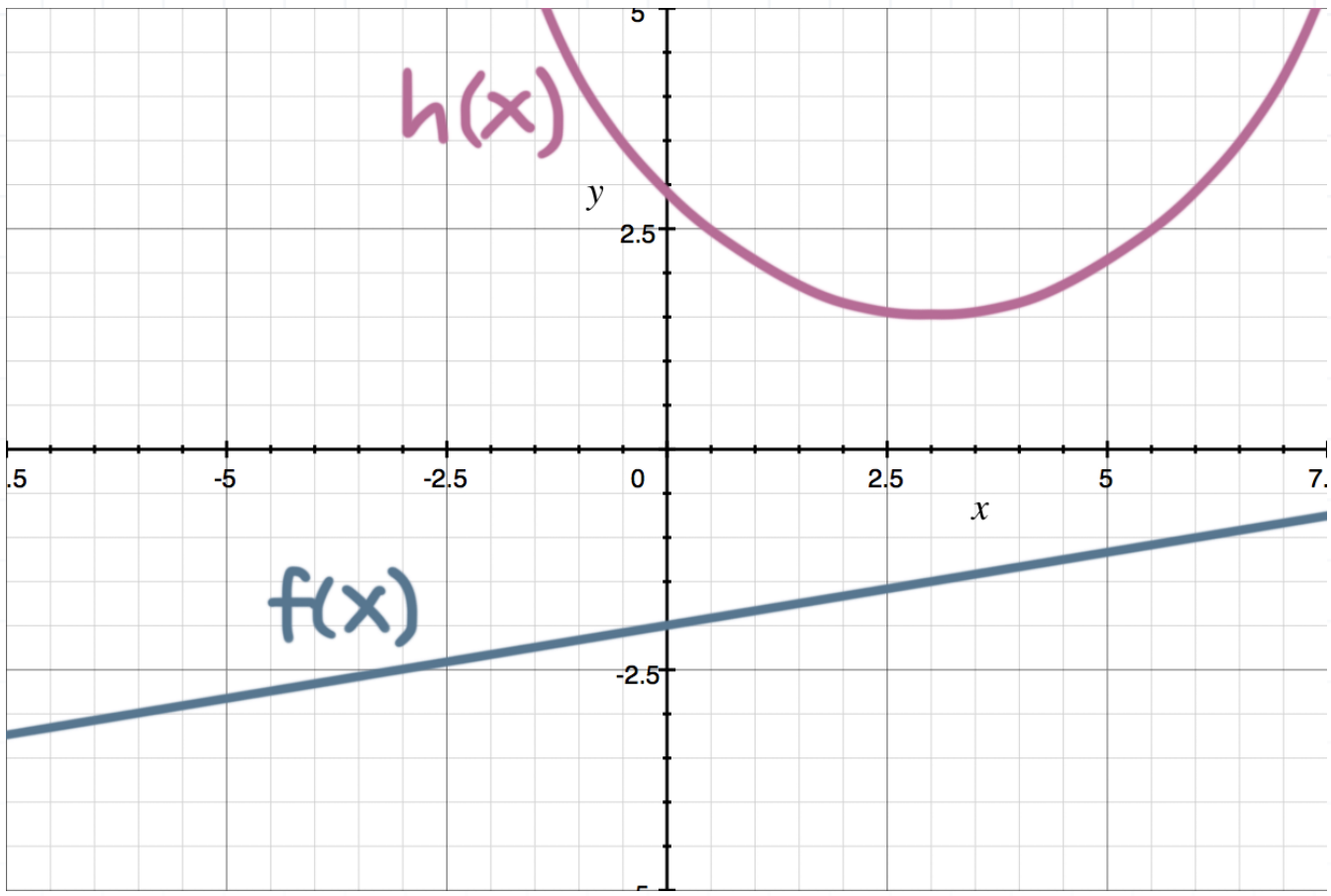
■ 2. Use limit laws and the graph below to evaluate the limit.

$$\lim_{x\to 4}\frac{h(x)}{j(x)}$$



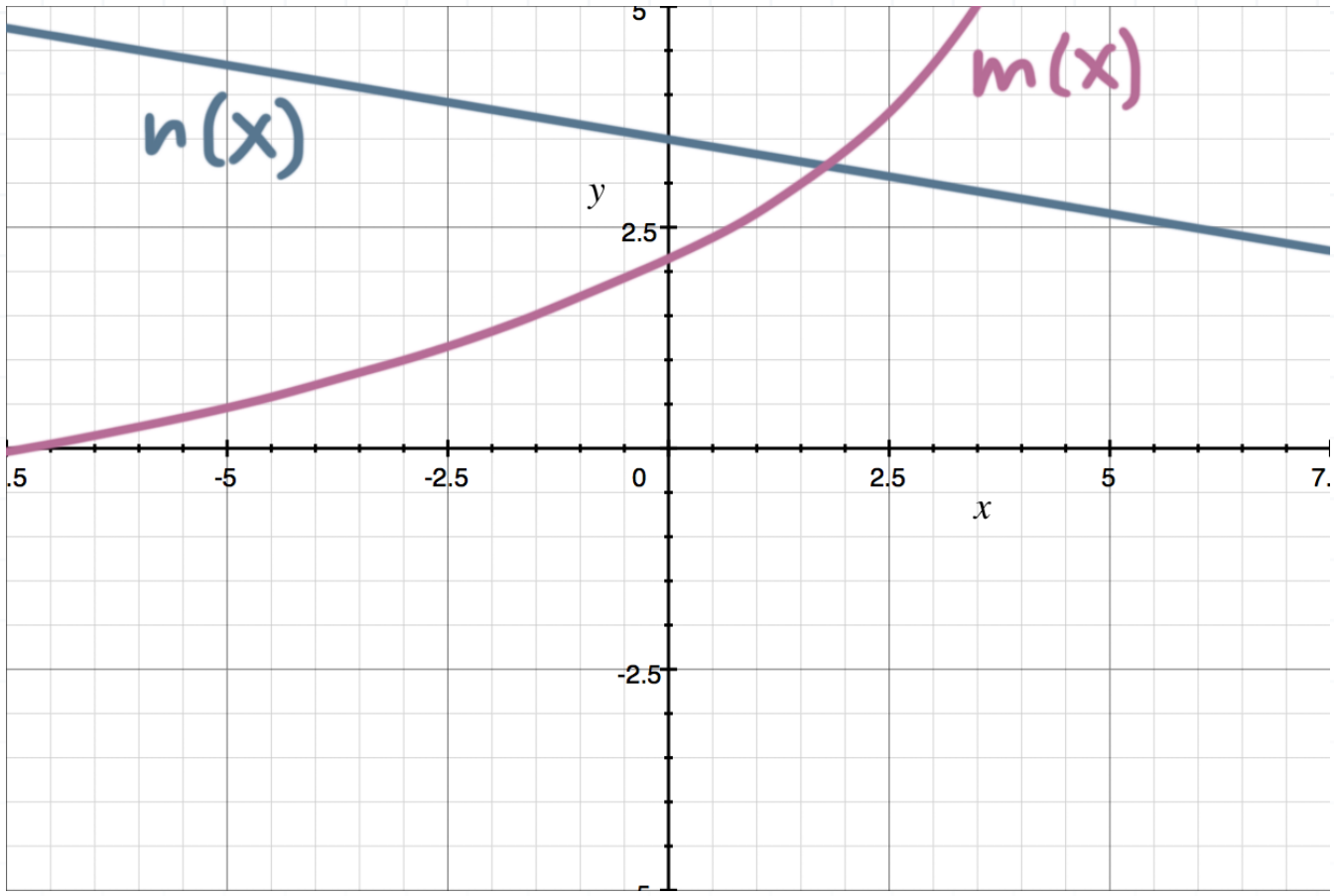
3. Use limit laws and the graph below to evaluate the limit.

$$\lim_{x \to 0} \left[2f(x) \cdot 3h(x) \right]$$



4. Use limit laws and the graph below to evaluate the limit.

$$\lim_{x \to -3} \left[\frac{5m(x)}{n(x)} - \frac{4m(x)}{n(x)} \right]$$



5. Evaluate the limit.

$$\lim_{x\to 6}\left(\sqrt{x-2}+\frac{e^x}{2x+3}-x^2-12\right)$$

6. If $f(x)=x^2+4$, $g(x)=x-5$, and $h(x)=-5x$, evaluate the limit.

$$\lim_{x\to 1}\sqrt{\frac{f(x)g(x)}{h(x)}}$$

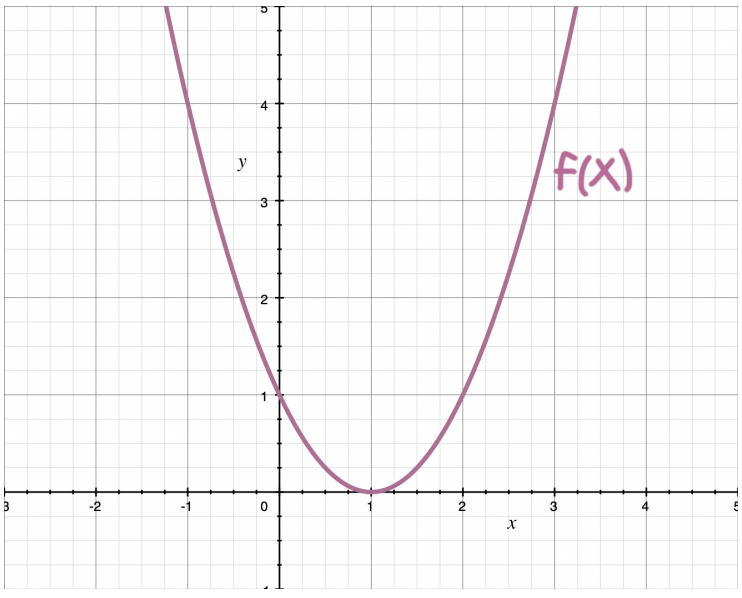
LIMITS OF COMPOSITES

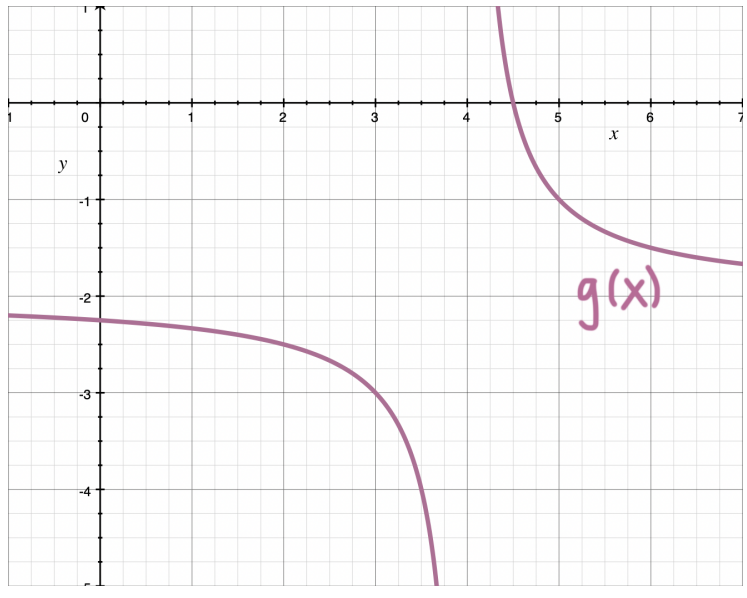
- 1. What is $\lim_{x\to 3} f(g(x))$ if $f(x) = 4x$ and $g(x) = 6x - 9$?

- 2. What is $\lim_{x\to -4} f(g(x))$ if $f(x) = 2x^2$ and $g(x) = 2x - 1$?

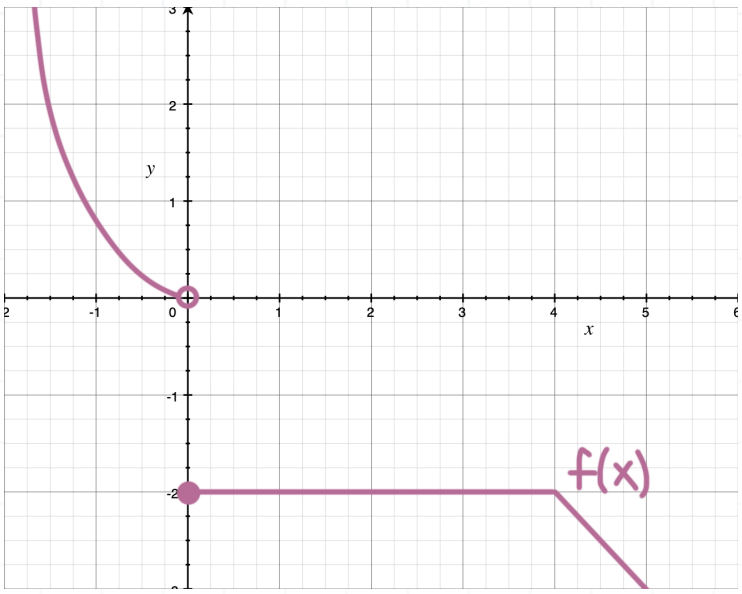
- 3. What is $\lim_{x\to \frac{\pi}{2}} f(g(x))$ if $f(x) = \sin x$ and $g(x) = x/2$?

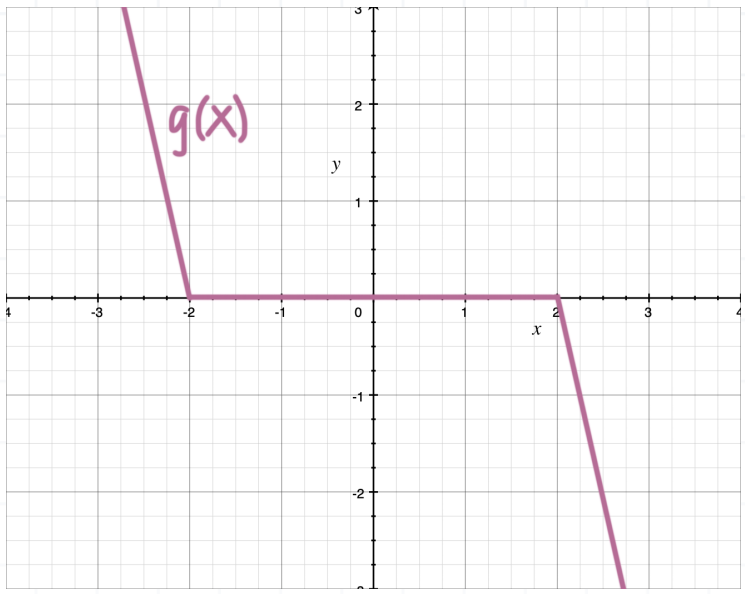
- 4. If $f(x)$ and $g(x)$ are graphed below, find $\lim_{x\to 3} g(f(x))$.



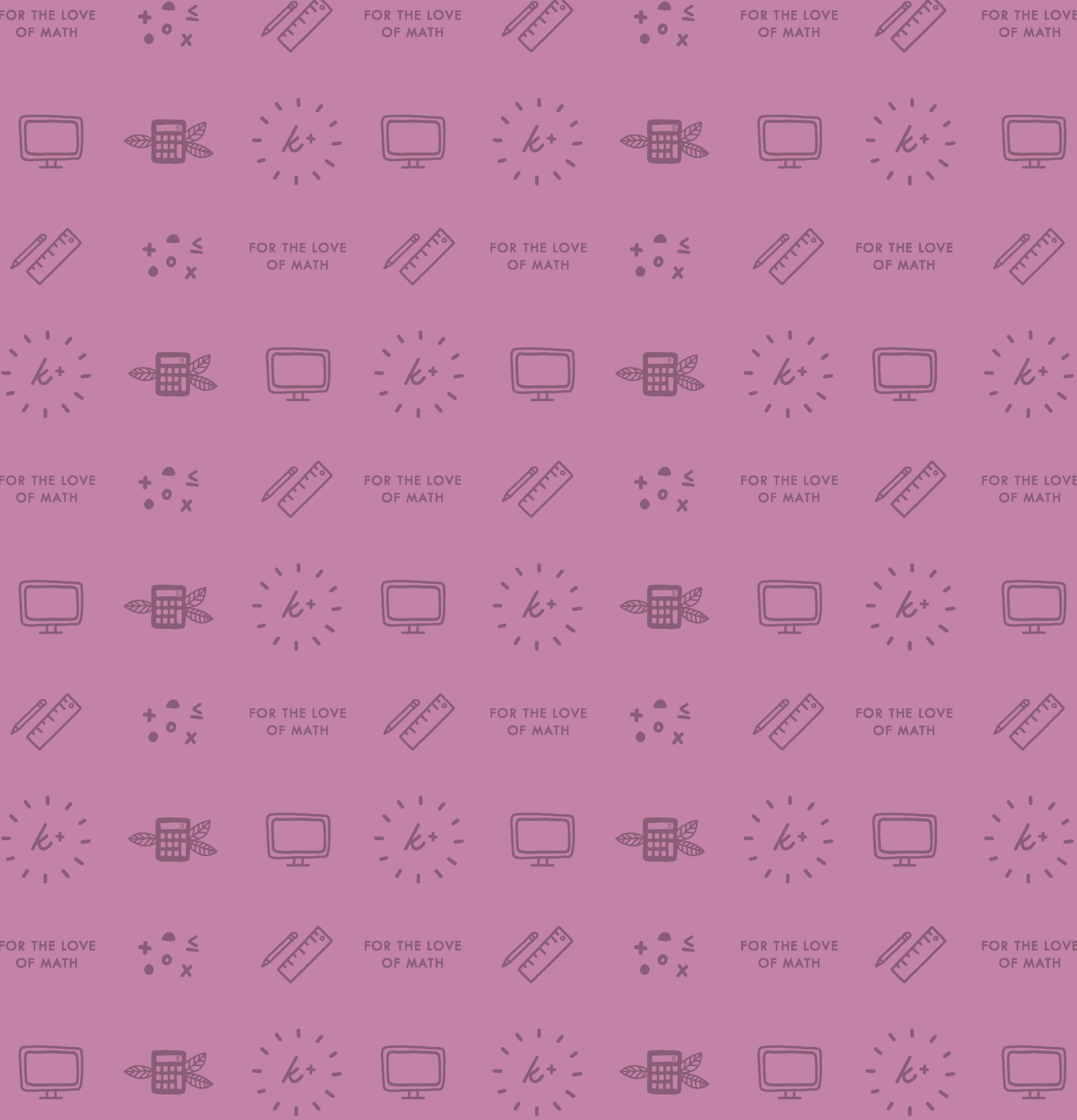


- 5. If $f(x)$ and $g(x)$ are graphed below, find $\lim_{x\to 2} g(f(x))$.





6. If $f(x) = 2x + 1$ and $\lim_{x \to 3} h(x) = -2$, find $\lim_{x \to 3} f(h(x))$.



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