Work the first problem in the space provided. Circle your answer. Find your answer among the choices. Put #2 in the problem blank. Work that question and proceed in this manner until finished. Make sure you ***clearly communicate*** in each cell ***how*** you are getting your answer. There are 16 problems in this circuit.

For this circuit, you will use the table and graph on the attached sheet to answer the various questions.

Answer: 6 #1___ Let $k(x)=f(x)+g(x)$. Find $k'(1)$.	Answer: $\frac{1}{3}$ #_____ Evaluate $p'(1)$, given that $p(x)=4(f(x)+j(x))$
Answer: $-\frac{2}{3}$ # _____ Find $\frac{d}{dx}\left[\frac{x^2}{h(x)}\right]\Bigg\vert_{x=1}$	Answer: -36 # _____ Find $\frac{d}{dx}\left[h(f(2x+1))\right]\Big\vert_{x=2}$
Answer: 1 #_____ If $m(x)=h(j(x))$, find $m'(5)$.	Answer: -2 # _____ If $k(x)=6f(x)(h(x)-1)$, find $k'(5)$.
Answer: -1 # ______ Find $\frac{d}{dx}\left[2x(g(x))\right]\Big\vert_{x=5}$	Answer: -5 # _____ Find $\frac{d}{dx}\left[\frac{1}{2}f(x)+2g(x)\right]\Bigg\vert_{x=2}=$

Answer: 0 #_____ Let $m(x)=\frac{j(x)}{h(x)}$. Find $m'(5)$.	Answer: -3 #_____ Evaluate $k'(1)$, given $k(x)=\frac{h(x)+6x}{9}$.
Answer: 4 #_____ Find $\frac{d}{dx}\left[f(x)g(x)\right]\Big\|_{x=1}$	Answer: -24 #_____ If $m(x)=7h(x)-5f(x)$, find $m'(5)$.
Answer: -9 #_____ Let $k(x)=x^3-2g(x)$. Find $k'(1)$.	Answer: -7 #_____ Find $\frac{d}{dx}\left[\frac{g(x)}{f(x)}\right]\Big\|_{x=2}=$
Answer: 3 #_____ Find $\frac{d}{dx}\left[h(x)j(x)\right]\Big\|_{x=1}$	Answer: $-\frac{2}{9}$ #_____ If $k(x)=f(g(x))$, what is the slope of the graph of $y=k(x)$ at $x=1$?

The table below gives values of the differentiable functions $f(x)$ and $g(x)$ and their derivatives $f'(x)$ and $g'(x)$ at selected values of x.

x	f	f'	g	g'
1	3	–8	2	3
2	–6	–12	$-\frac{1}{2}$	5
5	1	$\frac{1}{3}$	8	$-\frac{5}{2}$

The graph below shows $y = h(x)$ and $y = j(x)$. The solid graph, $y = h(x)$, consists of 2 linear pieces. The dashed graph, $y = j(x)$, consists of 2 linear pieces.