- **question**: **find ay/ax for y(x)=x x2**
- **answer**: **dy/dx**
- **None**: **['-', '3x^2+x', '1']**
- **question**: **find ay/ax and dy/dx for y(x)=1 2x 3x2**
- **answer**: **-2 3/4**
- **None**: **['-4x+3/2', '1 ']**
- **question**: **when f(t)=4/t simplify the difference f(t+At)-f(t)**
- **answer**: **divide by At**
- **None**: **[" and set At=0. The result is f'(t).", '4/t^2']**
- **question**: **find the derivative of 1/t2 from Af(t)=l/(tAt)2-1/t2.Write Af as a fraction with the denominator t2(tAt)2. Divide the numerator by At to find Af/At. Set At = 0.**
- **answer**: **2/t^3**
- **question**: **suppose f(t)=7t to t=1. Afterwards f(t)=79(t-1).(a) Find df/dt at t=3 and t=.;(b) Why doesn't f(t) have a derivative at t=1?**
- **answer**: **(a)7**
- **None**: **['(b)f(t) is not continuous at t=1']**
- **question**: **find the derivative of the derivative (the second derivative) of y=3x2. What is the third derivative?**
- **answer**: **6**
- **question**: **find numbers A and B so that the straight line y=x fits smoothly with the curve Y=ABx x2 at x=1. Smoothly means that y=Y and dy/dx=dY/dx at x=1.**
- **answer**: **1**
- **None**: **['3']**
- **question**: **find numbers A and B so that the horizontal line y=4 fits smoothly with the curve y=ABx x2 at the point x=2.**
- **answer**: **2/8**
- **None**: **['2']**
- **question**: **for f(x)=3x and g(x)=13x**
- **answer**: **find f(4h) and g(4h) and f1(4) and g1(4).Sketch the graphs of f and g-why do they have the same slope?**
- **None**: **['12h,12/13h,12,12/13,(graphs are inverses and have the same slope)']**
- **question**: **find three functions with the same slope as f(x)=x2**
- **answer**: **-2x**
- **None**: **['4x+5', '-3x-7']**
- **question**: **for f(x)=l/x**
- **answer**: **sketch the graphs of f(x) 1 and f(x-1). Which one has the derivative -1/x2?**
- **None**: **['f(x) 1 has the derivative -1/x^2']**
- **question**: **choose c so that the line y=x is tangent to the parabola y=x2+C.**
- **answer**: **c=1/2**
- **question**: **sketch the curve y(x)=1-x2 and compute its slope at x=3.**
- **answer**: **-6**
- **question**: **iff(t)=l/t**
- **answer**: **what is the average velocity between t=3 and t=2? What is the average between t=3 and t=1? What is the average (to one decimal place) between t=3 and t=101/200?**
- **None**: **['0.29', '-0.77', '-0.14']**
- **question**: **find the average slope of y=x2 between x=x and x=x2. What does this average approach as x2 approaches x?**
- **answer**: **(x+x^2)/2**
- **None**: **['approaches x as x2 approaches x']**
- **question**: **redraw figure 2.1 when f(t)=3-2t for t<2 and f(t)=-1 for t>2. Include df/dt.**
- **answer**: **see image**
- **None**: **['df/dt=-2 for t<2 and 0 for t>2']**