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I. Circle the right answer. (5 point each)

1) The following function is not differentiable at  $x = 2$

- a)  $f(x) = \frac{x+1}{x-2}$     b)  $f(x) = (x-2)^2$     c)  $f(x) = \frac{x^2}{x+2}$     d)  $f(x) = \sqrt{x+2}$

2) The following function is not differentiable at  $x = 1$

- a)  $f(x) = |x+1|$     b)  $f(x) = x^3 - 1$     c)  $f(x) = \frac{1}{x+1}$     d)  $f(x) = \sqrt[3]{x-1}$

3) Find the slope for  $f(x) = -4x^3$  at  $x = 2$

- A) 32    B) -32    C) -96    D) -48

4) What is the equation of the tangent line for the curve  $y = x^2 + 2$  at the point  $(-2, 6)$   $y' = 3x^2$

- A)  $y = -12x - 30$     B)  $y = 12x - 30$     C)  $y = 12x + 18$     D)  $y = -12x - 18$

II. Answer the following questions.

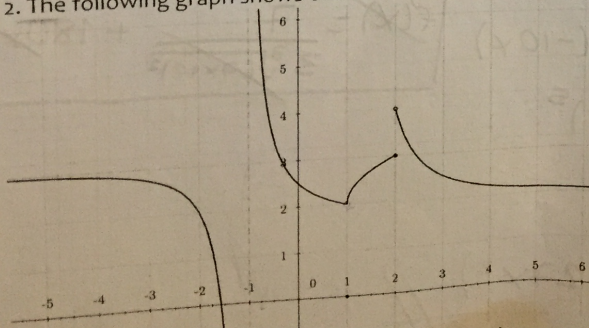
1. The concentration of a drug in the bloodstream is given by: (15 points)

$C = 870 - 2t^2$ . Where  $t$  is measured in minutes. Find the rate of change in the concentration at 30 minutes.

$C' = -4t$   
 $C'(30) = -4(30)$

$C(30) = -120$

2. The following graph shows the function  $y = f(x)$  (20 points)



a) Find the values of "x" where the function is not continuous  $x = -1, 2$

b) Find the values of "x" where the function is not differentiable  $x = -1, 1, 2$

$m = \phi$   
 $m = ?$

## Corrections Quiz 1 - 2nd Partial.

2) The following function is not differentiable at  $x=1$

$$d) f(x) = \sqrt[3]{x-1}$$

a) Derivative  $f(x) = \frac{7}{2x^2} - 6x^8 + 3\sqrt[5]{x^4}$

$$f'(x) = \frac{7}{2}x^{-2} - 6x^8 + 3\sqrt[5]{x^4/5}$$

$$f'(x) = \frac{-7}{x^3} - 48x^7 + \frac{12}{5x^{1/5}} //$$