

AP Calculus
Day 25 Warm Up

Name _____

Period _____

1. Let f be defined as follows:

$$f(x) = \begin{cases} \frac{x^2 - 9}{x - 3} & \text{for } x \neq 3, \\ 1 & \text{for } x = 3 \end{cases}$$

Which of the following are true about f ?

- I. $\lim_{x \rightarrow 3} f(x)$ exists
- II. $f(3)$ exists
- III. $f(x)$ is continuous at $x = 3$

- a) None
- b) I only
- c) II only
- d) I and II only
- e) I, II, and III

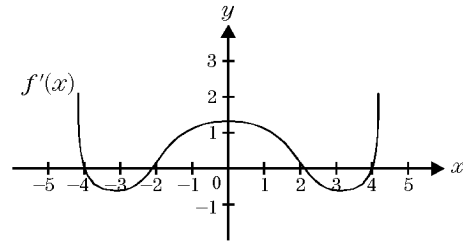
2. Let f be a continuous function on $[1, 5]$ and have the values shown.

The equation $f(x) = k$ must have at least 2 solutions on $[1, 5]$ for which value(s) of k ?

- a) $k > 8$
- b) 5
- c) $1 < k < 4$
- d) $k > 4$
- e) $4 < k < 8$

x	1	3	5
$f(x)$	4	1	8

3. The graph $f(x)$ has horizontal tangents when $x =$



- a) $-3, 0, 3$
- b) $-4, 2$
- c) $-4, -2, 2, 4$
- d) $-4, -2, 4$
- e) $2, 4$

4. If $f(x) = x^2 - 10$, find an equation of the tangent to the curve passing through the point $(5, 1)$.

- a) $y - 1 = -10(x - 5)$
- b) $y + 5 = -10(x + 1)$
- c) $y + 1 = 10(x + 5)$
- d) $y - 1 = 10(x - 5)$
- e) $y - 5 = 10(x - 1)$

5. If $f(x) = 5x^3$, then $f'(2) =$

- a) 30
- b) 10
- c) 40
- d) 60
- e) $15x^2$

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1.
Answer: d
CodePath: EAS.APC.C.F.17
2.
Answer: c
CodePath: EAS.APC.C.F.38
3.
Answer: c
CodePath: EAS.APC.E.C.1
4.
Answer: d
CodePath: EAS.APC.E.C.6
5.
Answer: d
CodePath: EAS.APC.E.B.1