

AP Calculus
Warm Up Day 41

Name _____

Date _____

1. If $\frac{1}{A} + \frac{1}{B} = \frac{1}{C}$, then $A =$

a) $C + B$ b) $\frac{CB}{B - C}$ c) $C - B$

d) $\frac{B + C}{CB}$ e) $B - C$

2. Consider $f(x) = \begin{cases} x + c & \text{for } x < -2, \\ cx^2 + 7 & \text{for } x \geq -2 \end{cases}$

For what value of the constant c is f continuous for all real numbers?

3. What is $\lim_{h \rightarrow 0} \frac{\sin(x+h) - \sin(x)}{h}$, when $x = \frac{\pi}{6}$?

a) 0 b) $-\frac{1}{2}$ c) $\frac{1}{2}$

d) $\frac{\sqrt{3}}{2}$ e) $-\frac{\sqrt{3}}{2}$

4. Given the functions f and g which are differentiable and have the values shown in the table:

If $A = g(4x)$ then $A'(-2) =$

a) -8 b) 72

c) 36 d) 24

e) 18

| x | f | f' | g | g' |
|------|------|------|------|------|
| -8 | 4 | 3 | -2 | 6 |
| -6 | 10 | 12 | 0 | 9 |
| -2 | 16 | 9 | 6 | 18 |
| 2 | 30 | 15 | 12 | 24 |

5. If $f(x) = \ln(\cos(2x - 5))$, then $f'(x) =$

a) $\frac{\sin(2x - 5)}{\cos(2x - 5)}$ b) $-\sin(\ln(2x - 5))$

c) $2 \sin(2x - 5)$ d) $-2 \ln(\sin(2x - 5))$

e) $-2 \tan(2x - 5)$

1.
Answer: b
CodePath: EAS.SAT.B.D.8
2.
Answer: -9
CodePath: EAS.APC.C.F.46
3.
Answer: d
CodePath: EAS.APC.D.A.24
4.
Answer: d
CodePath: EAS.APC.D.B.28
5.
Answer: e
CodePath: EAS.APC.D.N.36