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| Student: _____ | Instructor: Joe Better's | Assignment: 6.3 Classwork Day 2 |
| Date: _____ | Course: Pre-Calculus Pre AP (Master Course) | |

1. Find the exact value of $\sin 1^\circ + \sin 2^\circ + \sin 3^\circ + \dots + \sin 358^\circ + \sin 359^\circ$.

$$\sin 1^\circ + \sin 2^\circ + \sin 3^\circ + \dots + \sin 358^\circ + \sin 359^\circ = \underline{\hspace{2cm}}$$

2. Answer the following questions about the cotangent function.

- (a) Is the cotangent function even, odd, or neither?
 (b) Is the graph of the cotangent function symmetric? With respect to what?
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- (a) Is the cotangent function even, odd, or neither?

The cotangent function is (1) _____

- (b) Is the graph of the cotangent function symmetric? With respect to what?

- No. It is not symmetric.
 Yes. It is symmetric with respect to the x-axis.
 Yes. It is symmetric with respect to the y-axis.
 Yes. It is symmetric with respect to the origin.

- (1) neither.
 odd.
 even.
-

3. If $f(x) = \csc(x)$ and $f(a) = -4$, find the exact value of the following.

- (a) $f(-a)$
 (b) $f(a) + f(a + 2\pi) + f(a + 4\pi)$
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- (a) $f(-a) = \underline{\hspace{2cm}}$
 (Simplify your answer. Use integers or fractions for any numbers in the expression.)

- (b) $f(a) + f(a + 2\pi) + f(a + 4\pi) = \underline{\hspace{2cm}}$
 (Simplify your answer. Use integers or fractions for any numbers in the expression.)

1. 0

2. (1) odd.

Yes. It is symmetric with respect to the origin.

3. 4

- 12

6.3 classwork day 2

① $\sin 1^\circ + \sin 2^\circ + \sin 3^\circ + \dots + \sin 358^\circ + \sin 359^\circ$

$$\sin 1^\circ + \sin 359^\circ = 0$$

$$\sin 2^\circ + \sin 358^\circ = 0$$

$$\sin 3^\circ + \sin 357^\circ = 0$$

$$* \sin 180^\circ = \boxed{0}$$

② cotangent

$$y = \cot x$$

* odd $f(-x) = -f(x)$

~~True~~ $\cot(-x) = -\cot(x)$

True

symmetric
with origin
(odd)

* even $f(-x) = f(x)$

$$\cot(-x) = \cot(x)$$

False

not even
not symmetric
with respect
to y-axis

6.3 classwork day 2 continued

③ If ~~the~~ $f(x) = \csc(x)$ and $f(a) = -4$

a) $f(-a) = \boxed{4}$

$$\csc(-x) = -\csc(x)$$

b) $f(a) + f(a+2\pi) + f(a+4\pi)$

$$-4 + -4 + -4$$

$$\boxed{-12}$$