PreCalc BC Review Trig. Functions Name:

1. The equation $\sec^2 x - \tan x - 1 = 0$, has *n* solutions between 10° and 350°. Then *n* =

a) 0 b) 1 c) 2 d) 3 e) 4

2. What is the *y*intercept of $y = \sqrt{5}\cos\left(x + \frac{\pi}{5}\right)$?

a) 2.24 b) 1.81 c) 0.94
d) 0.81 e) 1.63

3. The length of the radius of a circle is one-half the length of an arc of the circle. How large is the central angle that intercepts the arc?

a) 60° b) 120° c) π
d) 1 e) 2

4. $\sin\left(\arctan\left(\frac{1}{3}\right)\right)$ =

a) 0.95 b) 0.32 c) 0.33
d) 0.35 e) 0.50

5. Where defined, $\frac{\csc x - 1}{\sin x - 1}$ =

a) sin*x* b) -sin*x* c) cscx
d) -cscx e) -cosx

6. The function defined by $f(x) = \sqrt{3}\cos x + 3\sin x$, has an amplitude of *(solve by graphing).*

a) 1.27 b) 1.73 c) 3.46
d) 4.73 e) 5.20

7. Arcsec(1.8) + Arccsc(1.8) equals

a) 74° b) 16° c) 90°
d) 0° e) 39°

8. If sec 1.4 = x, find the exact value of csc(2Arctan *x).*

a) 0.33 b) 3.03 c) 1.00
d) 1.06 e) 0.87

9. If the hour hand of a clock moves *k* radians in 48 minutes, *k* =

a) 2.4 b) 5 c) 0.3
d) 0.4 e) 0.5

10. If $2\sin 2x = 3\cos 2x$ and $0 \le 2x \le \frac{\pi}{2}$, then *x*=

a) 0.25 b) 0.52 c) 0.49
d) 0.39 e) 0.63

11. If $(\sec x)(\tan x) < 0$, which of the following must be true?

I. tanx < 0
II. $\csc x \cot x < 0$
III. *x* is in the third or fourth quadrant

a) I only b) II only c) III only
d) II and III e) I and II

12. What is the smallest positive angle that will make $5 - \sin\left(x + \frac{\pi}{6}\right)$ a maximum?

a) 1.05 b) 2.09 c) 1.57
d) 4.19 e) 5.24

13. A sector of a circle has an arc length of 2.4 feet and an area of 14.3 square feet. What is the length of the radius in feet?

a) 9.4 b) 10.3 c) 11.9
d) 12.1 e) 12.8