Precalculus Test 4 (Sections 4.5 – 4.7) Name _____

I. Multiple Choice

_____ 1. $\text{Sin}^{-1}(-\frac{1}{2}) =$
(A) -30˚ (B) 30˚ (C) -60˚ (D) 150˚ (E) 330˚

_____ 2. What is the range of y= Arctan (x) ?
(A) $0^\circ < y < 180^\circ$ (B) $-90^\circ < y < 90^\circ$ (C) $0^\circ < y < 360^\circ$
(D) $-1 \le y \le 1$ (E) $-\infty \le y \le \infty$ (F) None of the above

_____ 3. What is the domain of $y = \text{Sin}^{-1}(x)$?
(A) $0^\circ \le y \le 180^\circ$ (B) $-90^\circ \le y \le 90^\circ$ (C) $0^\circ < y < 360^\circ$
(D) $-1 \le y \le 1$ (E) $-\infty \le y \le \infty$

_____ 4. What is the range of y = ArcCos (x) ?
(A) $0^\circ \le y \le 180^\circ$ (B) $-90^\circ \le y \le 90^\circ$ (C) $0^\circ < y < 360^\circ$
(D) $-1 \le y \le 1$ (E) $-\infty \le y \le \infty$

_____ 5. The exact value (in radians) of $Cos^{-1}\left(\frac{-\sqrt{2}}{2}\right) =$

(A) $-\frac{\pi}{4}$ (B) $\frac{\pi}{4}$ (C) $\frac{\pi}{2}$ (D) $\frac{\pi}{6}$ (E) $\frac{3\pi}{4}$

II. Free Response
Show all work on your own paper!

7. Determine the exact values of the six trigonometric functions of θ if θ is in standard position and its terminal side contains the point (3, -2).

8. Determine the range of y = sec (x).

9. Determine the (A) ***amplitude*** and (B) ***period*** of $y = 1 - 2\sin 3\left(x + \frac{\pi}{4}\right)$

10. Determine the (A) ***horizontal*** and (B) ***vertical displacements*** of
$y = -2 - 3\cos 4\left(x + 20^\circ\right)$

III. Graph each of the following for one period:

11. y = tan (x)

12. y = csc (x)

13. y = 2 sin (π x)

14. y = Cos^{-1} (x)

15. $y = 1 + 3\cos 2\left(x - 40°\right)$

16. $y = \left|\sin(x)\right|$

Extra Credit: Graph $y = -3 - 2\sin\left(\frac{\pi}{3}x + \pi\right)$ for one period.