Math 123 Exam 3A

December 6, 2010 Professor Ilya Kofman

NAME: _____

No calculators on pages 1-2.

1. Find the exact value:

(a) $\sin(\frac{4\pi}{3}) =$_____

(b) $\cos(\frac{7\pi}{6}) =$_____

(c) $\tan(-\frac{\pi}{4}) =$_____

(d) $\sec(\frac{5\pi}{4}) =$_____

(e) $\csc(\frac{5\pi}{6}) =$_____

(f) $\sin(270°) =$_____

(g) $\cos(-45°) =$_____

(h) $\tan(120°) =$_____

(i) $\sec(210°) =$_____

(j) $\csc(180°) =$_____

2. If $\sin t = -\frac{4}{5}$, with terminal point $P(t)$ in quadrant III, find the exact value:

(a) $\cos t =$_____

(b) $\tan t =$_____

(c) $\sec t =$_____

(d) $\csc t =$_____

3. Let $y = 2\sin(3x)$.

(a) amplitude=_____ **(b)** period=_____ **(c)** phase shift=_____

(d) sketch the graph:

4. Let $y = 4\cos(2x - \frac{\pi}{3})$.

(a) amplitude=_____ **(b)** period=_____ **(c)** phase shift=_____

(d) sketch the graph:

5. Let $y = \tan(x - \frac{\pi}{3})$.

(a) amplitude=_____ **(b)** period=_____ **(c)** phase shift=_____

(d) sketch the graph:

6. From a 10 g sample, radioactive Substance X decayed to 4.5 g after 12 days.

(a) Find the function $A(t)$ that models the mass of Substance X.

(b) Find the half-life of Substance X.

(c) Find the mass remaining after 17 days.

(d) After how many days will only 5 g remain?