Name_____

Date_____Period____

Precalculus Review Test Practice

Part A: You may use a graphing calculator on this part.

1) Find the point(s) of intersection of the following graphs.

$f(x) = -|4x - 2| + 1$

$g(x) = \frac{1}{2}x - 4$

2) Find any relative minimum or maximum values of the following function.

$f(x) = 2x^4 - 3x^3 + 2$

3) Find the intercepts of the following function.

$f(x) = x^5 - 3x^2 + 2x$

4) Evaluate the function $f(x) = -\sqrt{3x^2 - 2x + 16}$ for each of the given values.

a) $f(6)$ b) $f(-4)$ c) $f(2.56)$ d) $f(7.5)$ e) $f\left(\frac{3}{7}\right)$

5) Give the intervals on which the function is increasing, decreasing. or constant.

$f(x) = x^5 - 3x^3 + 2x + 6$

Part B: You may not use a graphing calculator on this part.

6) Find the point(s) of intersection of the following graphs.

$f(x) = 2x^2 - 3x - 3$

$g(x) = -3x + 6$

7) Find the intercepts of the following functions.

a) $f(x) = x^3 - 2x^2 - 24x$ b) $f(x) = x^3 + 5x^2 - x - 5$

8) Sketch the graph of the following functions. Include any “critical points” and asymptotes.

a) $y=-\sqrt{x-6}$ b) $y=(x+5)^3-2$ c) $y=(-x-2)^2-3$

d) $y=|x+6|+1$ e) $y=2^{x+1}-3$ f) $y=\dfrac{2x+1}{3x-2}$

g) $y=\ln(x-4)$ h) $y=\sqrt{-x^2+25}$ i) $y=\sin x$

j) $y=-\cos x$ k) $y=\tan x$ l) $y=\cot x$

m) $y=\sec x$ n) $y=\csc x$

9) Find the domain and range of each of the following functions. Show your work either algebraically or graphically.

a) $y(\theta)=\cos\theta$ b) $g(x)=(x+2)^2-3$ c) $h(r)=\sqrt{81-r^2}$

d) $f(x)=\ln x+6$ e) $y=\sqrt{4x+2}$ f) $y=(x-4)^3$

g) $r(\theta)=\cot\theta$ h) $f(x)=\csc x$ i) $g(x)=\dfrac{-3}{2x+9}$

j) $y=e^x-5$

10) Evaluate each. Draw a diagram to represent each.

a) $\csc(-\pi)$ b) $\cot 11\pi/6$ c) $\cos(-3\pi/4)$

d) $\sin 4\pi/3$ e) $\tan 3\pi/2$ f) $\sin 7\pi/4$

g) $\cos \pi/2$ h) $\cos 2\pi$ i) $\cot(-\pi/6)$

j) $\sec 2\pi/3$ k) $\tan(-5\pi/6)$ l) $\csc 3\pi/2$

11) List the three Pythagorean Identities, from memory.

Use the fundamental trigonometric identities to give the simplest equivalent of each.

12) $\sin 2\theta =$

13) $\sin^2\theta - 1 =$

14) $\cot^2\theta =$

15) $-\tan^2\theta =$

16) $\dfrac{\sec\theta}{\tan\theta} =$

17) $\csc\theta \sin\theta =$

18) $\dfrac{\sin\theta}{\tan\theta} =$