Test Review
Chapter 5.1-5.2 and 7.1-7.3

ALL PROBLEMS MUST BE DONE ON SEPARATE PAPER OTHERWISE; THE REVIEW WILL NOT BE GRADED. SHOW ALL WORK FOR CREDIT. REVIEW IS DUE ON TEST DAY.

Find the exact value of the expression.

1) $sin^{-1}\frac{\sqrt{2}}{2}$ 2) $\cos^{-1}\frac{\sqrt{2}}{2}$ 3) $tan^{-1}\sqrt{3}$

4) $sin^{-1}(0)$ 5) $tan^{-1}(0)$

Use a calculator to find the value of the expression rounded to two decimal places.

6) $\cos^{-1}(0.2)$ 7) $tan^{-1}(0.2)$

Find the exact value of the expression. Do not use a calculator.

8) $\cos^{-1}(\cos\frac{4\pi}{7})$ 9) $sin^{-1}\sin\left(-\frac{\pi}{4}\right)$ 10. a) $sin^{-1}(\sin\frac{7\pi}{6})$ b) $\cos^{-1}(\cos\frac{5\pi}{3})$

Find the exact value, if any, of the composite function. If there is no value, say it is "not defined". Do not use a calculator.

11) $sin(sin^{-1}\,1.8)$

Find the exact value of the expression.

12) $\tan\left[cos^{-1}\left(-\frac{1}{2}\right)\right]$ 13) $\cos\left(tan^{-1}\left(\frac{\sqrt{3}}{3}\right)\right)$ 14) $\cot[sin^{-1}\left(\frac{\sqrt{2}}{2}\right)]$

15) $\sin(tan^{-1}2)$ 16) $\tan\left(cos^{-1}\left(\frac{2}{9}\right)\right)$ 17) $\cos\left(sin^{-1}\left(\frac{3}{5}\right)\right)$

18) $\cos\left[sin^{-1}\left(\frac{4}{2}\right)\right]$ 19) $\sin\left[cos^{-1}\left(\frac{4}{7}\right)\right]$ 20) $sin^{-1}[\sin\left(\frac{5\pi}{4}\right)]$

Write the trigonometric expression as an algebraic expression in u.

21) $\cos\ (sin^{-1}u)$ 22) $\sin(tan^{-1}u)$

Solve the equation on the interval $0 \le \theta < 2\pi$.

23) $4\,cos^2x\ -\ 3\ =\ 0$ 24) $1\ -\ sin\,\theta\ =\frac{1}{2}$ 25) $2\,cos\,\theta\ +\ 2\sqrt{3}\ =\ \sqrt{3}$

26) $2\,cos\,\theta\ +\ 1\ =\ 0$ 27) $4\,sin^2\,\theta\ -\ 3\ =\ 0$

Use a calculator to solve the equation on the interval $0 \le \theta < 2\pi$. Round the answer to two decimal places.

28) $cos\,\theta\ =\ 0.75$ 29) $sin\,\theta\ =\ 0.33$

Solve the equation. Give a general formula for all the solutions.

30) a) $sin\,\theta\ =\ 1$ b) $\frac{1}{4}\sin 2\theta = \frac{1}{8}$

Solve the equation on the interval $0 \le \theta < 2\pi$.

31) $cos^2\,\theta\ -\ 1\ =\ 0$ 32) $sin^2\,\theta\ +\ sin\,\theta\ =\ 0$ 33) $2\,cos^2\,\theta\ -\ 3\,cos\,\theta\ +\ 1\ =0$

34) $2sin^2\theta\ =\ 3(cos\,\theta\ +\ 1)$

Use a calculator to solve the equation on the interval $0 \le x < 2\pi$. Round the answer to one decimal place if necessary.

35) $2x\ -\ 3\,cos\,x\ =\ 0$ 36) $6x\ -\ 5\,sin\,x\ =\ 2$

For the given functions f and g, find the requested composite function value.

37) $f(x) = 2x + 6,\ g(x) = 4x^2 + 3;\ Find\ (f \circ f)(3)$ 38) $f(x) = 3x + 11,\ g(x) = 2x - 1;\ Find\ (f \circ g)(x).$

Decide whether the composite functions, f ∘ g and g ∘ f, are equal to x.

39) $f(x) = \sqrt[5]{x-4}, g(x) = x^5 + 4$

The function f is one-to-one. Find its inverse.

19) $f(x) = 2x - 7$