Date: February 8, 2017   Professor Ilya Kofman
    You may use only Julia during this exam. No calculators, etc.

NAME: _____ Key _____

Problem 1. Convert each of the following expressions to its Julia equivalent:

a. $\sin^{-1}(4x/2\pi)$.

$$a\sin(4x/2pi)$$

$$a\sin((4*x)/(2*pi))$$

b. $5x^{y-7z^{40}}$

$$5x\wedge(y-7z\wedge40)$$

c. $\dfrac{x}{\frac{z}{y}-3}$

$$x/(z/y-3)$$

d. $\dfrac{|x|}{\arcsin^2 x} + \dfrac{5e^{\sqrt{x}}}{\pi}$

$$abs(x)/asin(x)\wedge2 + 5e\wedge sqrt(x)/pi$$

c. $\dfrac{4x^6}{\sqrt[3]{x+7}}$

$$4x\wedge6/cbrt(x+7)$$

$$4x\wedge6/(x+7)\wedge(1/3)$$

Problem 2. Convert the following Julia expressions to standard mathematical expressions. Use parantheses to clearly indicate the order of operations:

a. `x^y^z`

$$x^{y^z}$$

b. `sin(x)^3/5*sqrt(x)`

$$\frac{\sin^3(x)}{5} \cdot \sqrt{x}$$

c. `exp(x+z)/x-y`

$$\frac{e^{x+z}}{x} - y$$

d. `x-z/(y+x)*(z-x)`

$$x - \frac{z}{y+x}(z-x)$$

e. `6.3e-45`

$$6.3 \cdot 10^{-45}$$