IEEE floating-point in C#

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1 Results

C# distinguishes -0.0 from +0.0 internally but prints both as 0 by default. Moreover, there does not seem to be any standard way to force printing of the sign of -0.0, so to display the results below we detected this special case explicitly using \((r==0 \&\& 1/r<0)\).

Results are as required by the IEEE 754-2008 standard, except for Math.Pow(NaN, +/-0.0) and Math.Atan2(+/-0.0,+/-0.0). Source code is in cs/Numbers.cs.

1.1 Arithmetic operators

These all agree with the corresponding operators in Java.

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### 1.3 Two-argument mathematical functions

The `Atan2` function disagrees with IEEE 754-2008 and with Java on `Atan2(+/-0.0,+/-0.0)`.

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```
The IEEERemainder function agrees with floating-point remainder $x \% y$ on the arguments shown here, but not in general; for instance, IEEERemainder(7,2) is $-1$ whereas $7 \% 2$ is $+1$.

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The Pow function disagrees with IEEE 754-2008 and with Java on Pow(NaN, +/-0.0).
### 1.4 One-argument mathematical functions

These all agree with IEEE 754-2008 and with the corresponding functions in Java.

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