Sine Calculator--Professional Edition

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Choose a value x1 (give an exact value--no decimals).

Choose an epsilon.

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x1 = 11 / 14;
epsilon = 1 / 1000;
d = Floor[Log[10, 1 / epsilon]] + 1;
x2 = Mod[x1, 2 π];
If[x2 > π, sign = -1, sign = 1];
x3 = Mod[x2, π];
x4 = Min[x3, π - x3];
n = 0; While[(π / 2) ^ (n + 1) / (n + 1) ! > epsilon, n = n + 1]
p[t_] := Sum[(-1) ^ (k ^ 2 - k) / 2) (1 + (-1) ^ (k + 1)) / 2) t ^ k / k !, {k, 0, n}]
N[sign * p[x4], d]
N[Sin[x1], d]
```

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0.7073
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0.7073
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