$arctangenta := \arctan(x)$

$$\arctan(x) \tag{1}$$

> $taylor(arctangenta, x = 0)$

$$x - \frac{1}{3}x^3 + \frac{1}{5}x^5 + O(x^7) \tag{2}$$

> "π/4=arctan(1). Restul in formula lui Taylor este <=1/(2n+1)<=10^-5, de unde n>=50 000. "

"π/4=arctan(1). Restul in formula lui Taylor este <=1/(2n+1)<=10^-5, de unde n>=50 000. " (3)

> $p := convert(taylor(arctangenta, x = 0, 70000), polynom)$

$$\begin{aligned} p := {} & \frac{1}{48145}x^{48145} - \frac{1}{48147}x^{48147} + \frac{1}{48149}x^{48149} - \frac{1}{48151}x^{48151} + \frac{1}{48153}x^{48153} \\ & - \frac{1}{48155}x^{48155} + \frac{1}{48157}x^{48157} - \frac{1}{48159}x^{48159} + \frac{1}{48161}x^{48161} - \frac{1}{48163}x^{48163} \\ & + \frac{1}{48165}x^{48165} - \frac{1}{48167}x^{48167} + \frac{1}{48169}x^{48169} - \frac{1}{48171}x^{48171} + \frac{1}{48173}x^{48173} \\ & - \frac{1}{48175}x^{48175} + \frac{1}{48177}x^{48177} - \frac{1}{48179}x^{48179} + \frac{1}{48181}x^{48181} - \frac{1}{48183}x^{48183} \\ & + \frac{1}{48185}x^{48185} - \frac{1}{48187}x^{48187} + \frac{1}{48189}x^{48189} - \frac{1}{48191}x^{48191} + \frac{1}{48193}x^{48193} \\ & - \frac{1}{48195}x^{48195} + \frac{1}{48197}x^{48197} - \frac{1}{48199}x^{48199} + \frac{1}{48201}x^{48201} - \frac{1}{48203}x^{48203} \\ & + \frac{1}{48205}x^{48205} - \frac{1}{48207}x^{48207} + \frac{1}{48209}x^{48209} - \frac{1}{48211}x^{48211} + \frac{1}{48213}x^{48213} \\ & - \frac{1}{48215}x^{48215} + \frac{1}{48217}x^{48217} - \frac{1}{48219}x^{48219} + \frac{1}{48221}x^{48221} - \frac{1}{48223}x^{48223} \\ & + \frac{1}{48225}x^{48225} - \frac{1}{48227}x^{48227} + \frac{1}{48229}x^{48229} - \frac{1}{48231}x^{48231} + \frac{1}{48233}x^{48233} \\ & - \frac{1}{48235}x^{48235} + \frac{1}{48237}x^{48237} - \frac{1}{48239}x^{48239} + \frac{1}{48241}x^{48241} - \frac{1}{48243}x^{48243} \\ & + \frac{1}{48245}x^{48245} - \frac{1}{48247}x^{48247} + \frac{1}{48249}x^{48249} - \frac{1}{48251}x^{48251} + \frac{1}{48253}x^{48253} \\ & - \frac{1}{48255}x^{48255} + \frac{1}{48257}x^{48257} - \frac{1}{48259}x^{48259} + \frac{1}{48261}x^{48261} - \frac{1}{48263}x^{48263} \\ & + \frac{1}{48265}x^{48265} - \frac{1}{48267}x^{48267} + \frac{1}{48269}x^{48269} - \frac{1}{48271}x^{48271} + \frac{1}{48273}x^{48273} \\ & - \frac{1}{48275}x^{48275} + \frac{1}{48277}x^{48277} - \frac{1}{48279}x^{48279} + \frac{1}{48281}x^{48281} - \frac{1}{48283}x^{48283} \\ & + \frac{1}{48285}x^{48285} - \frac{1}{48287}x^{48287} + \frac{1}{48289}x^{48289} - \frac{1}{48291}x^{48291} + \frac{1}{48293}x^{48293} \\ & - \frac{1}{48295}x^{48295} + \frac{1}{48297}x^{48297} - \frac{1}{48299}x^{48299} + \frac{1}{48301}x^{48301} - \frac{1}{48303}x^{48303} \\ & + \frac{1}{48305}x^{48305} - \frac{1}{48307}x^{48307} + \frac{1}{48309}x^{48309} - \frac{1}{48311}x^{48311} + \frac{1}{48313}x^{48313} \end{aligned} \tag{4}$$

$$-\frac{1}{48315}x^{48315}+\frac{1}{48317}x^{48317}-\frac{1}{48319}x^{48319}+\frac{1}{48321}x^{48321}-\frac{1}{48323}x^{48323}$$
$$+\frac{1}{48325}x^{48325}-\frac{1}{48327}x^{48327}+\frac{1}{48329}x^{48329}-\frac{1}{48331}x^{48331}+\frac{1}{48333}x^{48333}$$
$$-\frac{1}{48335}x^{48335}+\frac{1}{48337}x^{48337}-\frac{1}{48339}x^{48339}+\frac{1}{48341}x^{48341}-\frac{1}{48343}x^{48343}$$
$$+[...34800\ terms...]+\frac{1}{48345}x^{48345}+\frac{1}{69665}x^{69665}-\frac{1}{69667}x^{69667}+\frac{1}{69669}x^{69669}$$
$$-\frac{1}{69671}x^{69671}+\frac{1}{69673}x^{69673}-\frac{1}{69675}x^{69675}+\frac{1}{69677}x^{69677}-\frac{1}{69679}x^{69679}$$
$$+\frac{1}{69681}x^{69681}-\frac{1}{69683}x^{69683}+\frac{1}{69685}x^{69685}-\frac{1}{69687}x^{69687}+\frac{1}{69689}x^{69689}$$
$$-\frac{1}{69691}x^{69691}+\frac{1}{69693}x^{69693}-\frac{1}{69695}x^{69695}+\frac{1}{69697}x^{69697}-\frac{1}{69699}x^{69699}$$
$$+\frac{1}{69701}x^{69701}-\frac{1}{69703}x^{69703}+\frac{1}{69705}x^{69705}-\frac{1}{69707}x^{69707}+\frac{1}{69709}x^{69709}$$
$$-\frac{1}{69711}x^{69711}+\frac{1}{69713}x^{69713}-\frac{1}{69715}x^{69715}+\frac{1}{69717}x^{69717}-\frac{1}{69719}x^{69719}$$
$$+\frac{1}{69721}x^{69721}-\frac{1}{69723}x^{69723}+\frac{1}{69725}x^{69725}-\frac{1}{69727}x^{69727}+\frac{1}{69729}x^{69729}$$
$$-\frac{1}{69731}x^{69731}+\frac{1}{69733}x^{69733}-\frac{1}{69735}x^{69735}+\frac{1}{69737}x^{69737}-\frac{1}{69739}x^{69739}$$
$$+\frac{1}{69741}x^{69741}-\frac{1}{69743}x^{69743}+\frac{1}{69745}x^{69745}-\frac{1}{69747}x^{69747}+\frac{1}{69749}x^{69749}$$
$$-\frac{1}{69751}x^{69751}+\frac{1}{69753}x^{69753}-\frac{1}{69755}x^{69755}+\frac{1}{69757}x^{69757}-\frac{1}{69759}x^{69759}$$
$$+\frac{1}{69761}x^{69761}-\frac{1}{69763}x^{69763}+\frac{1}{69765}x^{69765}-\frac{1}{69767}x^{69767}+\frac{1}{69769}x^{69769}$$
$$-\frac{1}{69771}x^{69771}+\frac{1}{69773}x^{69773}-\frac{1}{69775}x^{69775}+\frac{1}{69777}x^{69777}-\frac{1}{69779}x^{69779}$$
$$+\frac{1}{69781}x^{69781}-\frac{1}{69783}x^{69783}+\frac{1}{69785}x^{69785}-\frac{1}{69787}x^{69787}+\frac{1}{69789}x^{69789}$$
$$-\frac{1}{69791}x^{69791}+\frac{1}{69793}x^{69793}-\frac{1}{69795}x^{69795}+\frac{1}{69797}x^{69797}-\frac{1}{69799}x^{69799}$$
$$+\frac{1}{69801}x^{69801}-\frac{1}{69803}x^{69803}+\frac{1}{69805}x^{69805}-\frac{1}{69807}x^{69807}+\frac{1}{69809}x^{69809}$$
$$-\frac{1}{69811}x^{69811}+\frac{1}{69813}x^{69813}-\frac{1}{69815}x^{69815}+\frac{1}{69817}x^{69817}-\frac{1}{69819}x^{69819}$$
$$+\frac{1}{69821}x^{69821}-\frac{1}{69823}x^{69823}+\frac{1}{69825}x^{69825}-\frac{1}{69827}x^{69827}+\frac{1}{69829}x^{69829}$$
$$-\frac{1}{69831}x^{69831}+\frac{1}{69833}x^{69833}-\frac{1}{69835}x^{69835}+\frac{1}{69837}x^{69837}-\frac{1}{69839}x^{69839}$$
$$+\frac{1}{69841}x^{69841}-\frac{1}{69843}x^{69843}+\frac{1}{69845}x^{69845}-\frac{1}{69847}x^{69847}+\frac{1}{69849}x^{69849}$$

$$-\frac{1}{69851}x^{69851}+\frac{1}{69853}x^{69853}-\frac{1}{69855}x^{69855}+\frac{1}{69857}x^{69857}-\frac{1}{69859}x^{69859}+\frac{1}{69861}x^{69861}$$

```
> evalf(arctan(1))
```

$$0.7853981635 \quad \textbf{(5)}$$

```
> evalf(eval(p, x = 1))
```

$$0.7853910205 \quad \textbf{(6)}$$

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>
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