

$f\left(\sin \frac{\pi}{\sqrt{p}} + \cos^p \pi\right)$ $\frac{\sqrt{p}}{p} + 1$	$f(x) = px^p - px$ $px(x-p)$	8
$x\left(\frac{\sqrt{p}}{p} + 1\right)\left(\frac{\sqrt{p}}{p} - 1\right)$ $(\sqrt{p} + p)\left(\frac{\sqrt{p}}{p} - 1\right)$ $\frac{p}{p} - \sqrt{p} + \sqrt{p} - \frac{p}{p} = \boxed{-\frac{1}{p}}$	$f(x) = \frac{x+1}{x-1}$	9
$f(f(a)) = a$ $f\left(\frac{a+1}{a-1}\right) = a \rightarrow a \neq 1$ $\frac{a+1}{a-1} = 1 \Rightarrow \frac{a+1}{a-1} + 1 = \frac{a+1+a-1}{a-1-a+1} = \frac{2a}{a-1-a+1} = \frac{2a}{-1} = -2a$	$f(x) = \frac{x+1}{x-1}$	10
$f(g(a)) = x$ $g(x) = \sqrt{x^p - 1}$ $f(x) = x^p - px$	$f(x) = -p$ $x^p - px = -p$ $x^p - px + p = 0$ $(x-p)^p = 0$ $x = p$	11
$f(f) \times f(-p)$ $x+p=p \quad x+p=-p$ $x=1 \quad x=-q$	$f(x+p) = x^p - px + q$ $(x-p)(x-r)$	12
$\frac{(1-p)(1-r)}{1-p} \times \frac{(-q-p)(-q-r)}{1-p} = 1 \times 1 = 1$	$f(p, \omega)$ $f(p \cos^p x + \omega \cos x) = \tan^p x$	13
$p \cos^p x + \omega \cos x = p, \omega$ $\cos x (p \cos^p x + \omega) = p, \omega$ $\cos x = \frac{1}{p}$ $x = \frac{\pi}{p}$	$\tan^p \frac{\pi}{p} = (\sqrt{p})^p = p$	14

تکامل‌های مفرجه‌ها نباید در دامنه باشند! $x+1 \neq 0 \rightarrow x \neq -1$ $x \neq 0$ $x-1 \neq 0 \rightarrow x \neq 1$

$$x+2 \neq 0 \rightarrow x \neq -2 \quad ; \quad \frac{3}{x-1} + \frac{1}{x+2} \neq 0 \rightarrow \frac{3x+4+x-1}{(x-1)(x+2)} \neq 0 \rightarrow 4x+3 \neq 0 \rightarrow x \neq -\frac{3}{4}$$

$$D_f = \mathbb{R} - \left\{ -1, 0, 1, -2, -\frac{3}{4} \right\}$$