
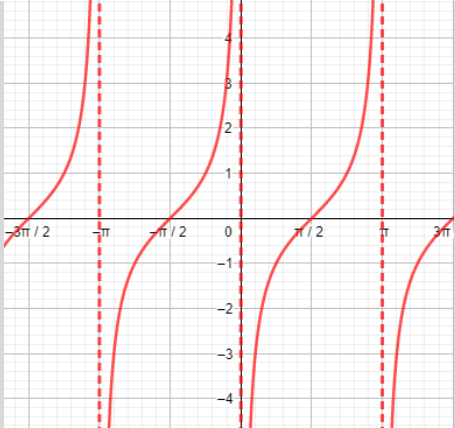


3. letnik	1. poglavje (Kotne funkcije)	
	Čas reševanja: 45 minut	Število možnih točk: 30

Točke za pravilno rešitev s postopkom			Točke za delno rešitev
1. [10t] Naloga			
a)	[3t]	$(\sin x + \cos x)^2 - \sin 2x = 1$	[1t] kvadriranje [0,5t] Upoštevanje $\sin^2 x + \cos^2 x = 1$ [1t] Zapis ali upoštevanje $\sin 2x = 2 \sin x \cos x$ [0,5t] $(\sin x + \cos x)^2 - \sin 2x = 1$
b)	[2t]	$Z_h = [-268, 356]$	1t+1t
c)	[2t]	$\sin \frac{\pi}{7} \cos \frac{6\pi}{7} + \cos \frac{\pi}{7} \sin \frac{6\pi}{7} = 0$	[1t] $\sin \frac{\pi}{7} \cos \frac{\pi}{7} + \cos \frac{6\pi}{7} \sin \frac{6\pi}{7} = \sin \left(\frac{\pi}{7} + \frac{6\pi}{7} \right)$ [1t] $\sin \frac{\pi}{7} \cos \frac{\pi}{7} + \cos \frac{6\pi}{7} \sin \frac{6\pi}{7} = 0$
č)	[3t]	$h(0) = 55$ $h_{min} = 33\text{m}$ $h(t) = 48,29\text{ m}$	[0,5t] Vstavitev $h(0) = 22 \sin(6 \cdot 0) + 55$ [0,5t] $h(0) = 55\text{ m}$ [0,5t] Zapis ali upoštevanje $\sin 6t = -1$ [0,5t] $h_{min} = 33\text{m}$ [0,5t] Vstavitev $h(10) = 22 \sin(6 \cdot 10) + 55$ [0,5t] $h(t) = 48,29\text{ m}$
2. [5t] Naloga			
	[5t]	$a = \frac{3}{2}, b = \frac{1}{2}, c = \frac{3}{2}$ $\omega_0 = 4\pi$ $x \in \mathbb{R} - \{4k\pi; k \in \mathbb{Z}\}$	1t+1t+1t+1t+1t
3. [6t] Naloga			
a)	[2t]	$3f(x) + 6 \sin^2 x = 3$	[0,5t] Vstavitev [0,5t] Preoblikovanje do $3 \cos^2 x + 3 \sin^2 x$ [0,5t] Izpostavitve 3 [0,5t] $3f(x) + 6 \sin^2 x = 3$
b)	[2t]	$x \in \left\{ \frac{\pi}{8} + k\pi; k \in \mathbb{Z} \right\} \cup \left\{ -\frac{\pi}{8} + k\pi; k \in \mathbb{Z} \right\}$	[0,5t] Zapis ali upoštevanje $\cos 2x = \cos^2 x - \sin^2 x$ [0,5t] Preoblikovanje $\cos 2x = \frac{\sqrt{2}}{2}$ [0,5t] $x \in \left\{ \frac{\pi}{8} + k\pi; k \in \mathbb{Z} \right\}$ [0,5t] $x \in \left\{ -\frac{\pi}{8} + k\pi; k \in \mathbb{Z} \right\}$
c)	[2t]	$f_{max} = 1$	[1t] $f_{max} = 1$ [1t] $f(x) = \cos^2 x - \sin^2 x = \cos 2x$

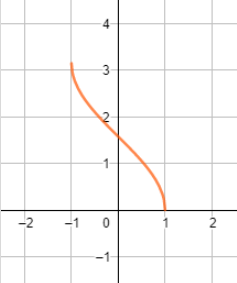
4. [6t] Naloga

a)	[2t]		<p>[2t] $\tan x$ [1*t] $\tan(x - \frac{\pi}{2})$</p>
b)	[2t]	$D_f = \mathbb{R} - \{k\pi; k \in \mathbb{Z}\}$ $Z_f = \mathbb{R}$	$1t+1t$
c)	[2t]	$f(x) \tan x = -1$	<p>[1t] Zapis ali upoštevanje $\tan(x - \frac{\pi}{2}) = -\cot x$ [1t] Izračun $f(x) \tan x = -1$</p>

5. [3t] Naloga

	[3t]	$\sin x = -\frac{3\sqrt{73}}{73}$	<p>[0,5t] Zapis ali upoštevanje $\tan^2 x + 1 = \frac{1}{\cos^2 x}$ [0,5t] Vstavitev $\frac{3}{8}$ [0,5t] Prevedba na $\cos^2 x = \frac{64}{73}$ [1t] Izračun $\cos x = -\frac{8\sqrt{73}}{73}$ [0,5t] Izračun $\sin x = -\frac{3\sqrt{73}}{73}$</p>
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6. [3t]* Bonus naloga

[3t]	$D_f = [-1, 1]$ $f(\cos 5\pi) = \pi$	
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