Rješenje prve školske zadaće iz Matematike 3E i 3R
Grupe E2, E4, R2, R4, R6
12.10.2006.

Grupa A

1. (**3 boda**) $S(\sqrt{111}) = -1$

2. (**4 boda**) $a_0 = 1$, $a_n = 0$, $b_n = \frac{-1}{n\pi}$, $f(x) = \frac{1}{2} - \sum_{n=1}^{\infty} \frac{\sin(n\pi x)}{n\pi}$,
$1 - \frac{1}{3} + \frac{1}{5} + \ldots = \frac{\pi}{4}$

3.(**3 boda**) a) (1 bod) $I = \frac{3}{34}$
b)(2 boda) $f(t) = \frac{1}{6}(t-8)^3 e^{t-8} u(t-8)$

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Grupa B

1.(**3 boda**) $\omega = 1$, amplituda$= 4$, $\varphi = \frac{-\pi}{6}$, $f(x) = 4\sin(x - \pi/6)$

2.(**4 boda**) $f(x) = \frac{1}{\pi} \int_0^{\infty} \left(\frac{\sin(\lambda x)}{\lambda} + \frac{\cos(\lambda x) - \cos(\lambda(x-2))}{2\lambda^2} \right) d\lambda$,
$\int_0^{\infty} \frac{\sin t}{t} dt = \pi f(1) = \pi/2$

3. (**3 boda**) a) (1 bod) $I = F(4) = \frac{7!}{4^8}$
b)(2 boda) $f(t) = e^{-4t}(\cos 5t - \frac{4}{5}\sin 5t)u(t)$