Zadan je vremenski kontinuirani signal [x( t )=-e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D-e%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

b. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

c. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite realni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

c. [\pi \delta (\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%2B1%29)

d. [\pi \delta (\omega -1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. [-1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1-%5Comega%7D)

Povratna informacija

Točan odgovor je: [\pi \delta (\omega -1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29)

**Pitanje 3**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

b. [j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B1-%5Comega%7D)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi \delta (\omega +1)+\frac{j}{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20%2B1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%2B1%7D)

e. [-j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-j%5Cover%7B1-%5Comega%7D)

f. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

Povratna informacija

Točan odgovor je: [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

**Pitanje 4**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Spektar (CTFT) vremenski kontinuiranog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) je [X(j\omega)=e^{-j2\omega}\bigl(\step(\omega)-\step(\omega-2)\bigr)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28j%5Comega%29%3De%5E%7B-j2%5Comega%7D%5Cbigl%28%5Cstep%28%5Comega%29-%5Cstep%28%5Comega-2%29%5Cbigr%29). Izračunajte energiju pomaknutog signala [x(t-3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-3%29).

Odaberite jedan odgovor:

a. [\infty](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cinfty)

b. [{1\over{20j\pi}}(e^{20j}-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B1%5Cover%7B20j%5Cpi%7D%7D%28e%5E%7B20j%7D-1%29)

c. Energija se ne može odrediti jer je spektar kompleksan.

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [{1\over{-20j\pi}}(e^{-20j}-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B1%5Cover%7B-20j%5Cpi%7D%7D%28e%5E%7B-20j%7D-1%29)

f. [1/\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F%5Cpi)

Povratna informacija

Točan odgovor je: [1/\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F%5Cpi)

**Pitanje 5**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan signal [x( n ) =\delta(n-1)-\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29-%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za AMPLITUDNI spektar dobivamo:

Odaberite jedan odgovor:

a. [A(\Omega)=2\sin(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Csin%28%5COmega%29)

b. [A(\Omega)=\bigl|2\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Csin%28%5COmega%29%5Cbigr%7C)

c. [A(\Omega)=2j\sin(j\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2j%5Csin%28j%5COmega%29)

d. [A(\Omega)=-2j\sin(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D-2j%5Csin%28%5COmega%29)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [A(\Omega)=\bigl|\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Csin%28%5COmega%29%5Cbigr%7C)

Povratna informacija

Točan odgovor je: [A(\Omega)=\bigl|2\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Csin%28%5COmega%29%5Cbigr%7C)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29). Odredite FAZU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

b. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

c. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

d. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 7**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29). Odredite AMPLITUDU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

c. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

d. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

e. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

f. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 8**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretni Fourierov red (DTFS) realnog signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*(e^{j\Omega}) = X(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7Bj%5COmega%7D%29%20)

B. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

E. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

F. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

Povratna informacija

Točan odgovor je: [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

**Pitanje 9**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},4,0,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C4%2C0%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

B. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [X_k=\{\underline{4},4j,-4,-4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C4j%2C-4%2C-4j%5C%7D)

E. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

F. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

**Pitanje 10**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo dva vremenski diskretna signala [x( n ) =\{1,\underline{1},1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B1%2C%5Cunderline%7B1%7D%2C1%2C1%5C%7D) i [y( n ) =\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D) za koja je poznato da imaju sve uzorke jednake nuli osim zadanih (podcrtani uzorak odgovara indeksu nula). Za pripadne spektre [X(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29) i [Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=Y%28e%5E%7Bj%5COmega%7D%29) dobivene vremenski diskretnom Fourierovom transformacijom (DTFT) vrijedi:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

c. [X(e^{j\Omega})=e^{-j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%7DY%28e%5E%7Bj%5COmega%7D%29)

d. [X(e^{j\Omega})=e^{j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%7DY%28e%5E%7Bj%5COmega%7D%29)

e. [X(e^{j\Omega})=e^{-j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

f. ništa od navedenoga

Povratna informacija

Točan odgovor je: [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t ) = -2 + 3\sin(5\pi t - \frac{\pi}{2})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%20-2%20%2B%203%5Csin%285%5Cpi%20t%20-%20%5Cfrac%7B%5Cpi%7D%7B2%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. [X_0=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-1)

B. [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

E. [X_0=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

F. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

Povratna informacija

Točan odgovor je: [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

**Pitanje 2**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo dva vremenski diskretna signala [x( n ) =\{1,\underline{1},1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B1%2C%5Cunderline%7B1%7D%2C1%2C1%5C%7D) i [y( n ) =\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D) za koja je poznato da imaju sve uzorke jednake nuli osim zadanih (podcrtani uzorak odgovara indeksu nula). Za pripadne spektre [X(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29) i [Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=Y%28e%5E%7Bj%5COmega%7D%29) dobivene vremenski diskretnom Fourierovom transformacijom (DTFT) vrijedi:

Odaberite jedan odgovor:

a. [X(e^{j\Omega})=e^{-j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%7DY%28e%5E%7Bj%5COmega%7D%29)

b. [X(e^{j\Omega})=e^{j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%7DY%28e%5E%7Bj%5COmega%7D%29)

c. ništa od navedenoga

d. [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [X(e^{j\Omega})=e^{-j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

Povratna informacija

Točan odgovor je: [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

**Pitanje 3**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski kontinuirani Fourierov red (CTFS) realnog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

B. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

C. [ X^*(j\omega)=X(j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28j%5Comega%29)

D. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

E. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

F. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

**Pitanje 4**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Odredite amplitudni spektar vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. [j\over{\sqrt{1+\omega^2}}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B%5Csqrt%7B1%2B%5Comega%5E2%7D%7D)

b. ništa od navedenog

c. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

d. [\pi \delta (\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega-1%29)

e. [1\over{|1-\omega|}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%7C1-%5Comega%7C%7D)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: ništa od navedenog

**Pitanje 5**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan Fourierov red (DTFS) perodične konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29) perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Spektar periodične konvolucije jest:

Odaberite jedan odgovor:

A. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

B. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

C. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

D. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

E. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

F. [ X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X_kY_k%20)

Povratna informacija

Točan odgovor je: [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

**Pitanje 6**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da su spektri (CTFT) vremenski kontinuiranih signala [x_1( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_1%28%20t%20%29) i [x_2( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_2%28%20t%20%29) jednaki [X_1( j\omega )=5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_1%28%20j%5Comega%20%29%3D5%5Comega) i [X_2( j\omega )=2/\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_2%28%20j%5Comega%20%29%3D2%2F%5Comega) odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) konvolucije [x_1( t )*x_2( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_1%28%20t%20%29%2Ax_2%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10)

e. [{5\omega^2+2}\over10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B5%5Comega%5E2%2B2%7D%5Cover10)

f. [10\over\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10%5Cover%5Comega)

Povratna informacija

Točan odgovor je: [10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10)

**Pitanje 7**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretni Fourierov red (DTFS) realnog signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

B. [ X^*(e^{j\Omega}) = X(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7Bj%5COmega%7D%29%20)

C. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

D. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

E. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

F. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

Povratna informacija

Točan odgovor je: [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

**Pitanje 8**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Odredite imaginarni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

b. [\pi \delta (\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%2B1%29)

c. [-1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1-%5Comega%7D)

d. [\pi \delta (\omega -1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [-1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1-%5Comega%7D)

**Pitanje 9**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=-e^{jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D-e%5E%7Bjt%7D). Odredite FAZU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

b. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

c. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

**Pitanje 10**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1) + \delta( n ) +\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%20%2B%20%5Cdelta%28%20n%20%29%20%2B%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za amplitudni spektar dobivamo:

Odaberite jedan odgovor:

a. [A(\Omega)=\bigl|2\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

b. [A(\Omega)=\bigl|2\cos(\Omega)+2\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B2%5Cbigr%7C)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [A(\Omega)=\bigl|2\cos(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%5Cbigr%7C)

e. [A(\Omega)=\bigl|\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

f. [A(\Omega)=\bigl|\cos(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Ccos%28%5COmega%29%5Cbigr%7C)

Povratna informacija

Točan odgovor je: [A(\Omega)=\bigl|2\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{2},0,2,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B2%7D%2C0%2C2%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

a. [X_k=\{\underline{4},0,4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C4%2C0%5C%7D)

b. [X_k=\{\underline{1},0,1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C1%2C0%5C%7D)

c. [X_k=\{\underline{1},0,-1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C-1%2C0%5C%7D)

d. [X_k=\{\underline{4j},0,4j,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4j%7D%2C0%2C4j%2C0%5C%7D)

e. [X_k=\{\underline{4},0,-4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C-4%2C0%5C%7D)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},0,1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C1%2C0%5C%7D)

**Pitanje 2**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=5j(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D5j%28%5Comega-2%29) odredite transformaciju signala [x( t )e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29e%5E%7B-j2t%7D)?

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. [\omega+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega%2B2)

d. [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

e. [5j(\omega-2)e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-2%29e%5E%7B-j2t%7D)

f. [5j(\omega-4)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-4%29)

Povratna informacija

Točan odgovor je: [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

**Pitanje 3**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1)+\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%2B%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

b. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

c. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

d. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

**Pitanje 4**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [x( j\omega )=5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20j%5Comega%20%29%3D5%5Comega) odredite transformaciju signala [x(t-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-2%29)?

Odaberite jedan odgovor:

a. [5(\omega-2)e^{j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29e%5E%7Bj%5Comega%7D)

b. [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

c. [5(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega%2B2%29)

d. [5(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29)

e. [5\omega e^{2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B2j%5Comega%7D)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) signala [x( t )=e^{-jt}\step( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cstep%28%20t%20%29).

Odaberite jedan odgovor:

a. [1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1%2B%5Comega%7D)

b. [-j\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-j%5Cover%7B1%2B%5Comega%7D)

c. [\pi \delta (\omega -1)+ {1\over j ( \omega -1 ) }](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%20%7B1%5Cover%20j%20%28%20%5Comega%20-1%20%29%20%7D)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [{\pi \delta (\omega +1)}+{1 \over j ( \omega +1 ) }](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B%5Cpi%20%5Cdelta%20%28%5Comega%20%2B1%29%7D%2B%7B1%20%5Cover%20j%20%28%20%5Comega%20%2B1%20%29%20%7D)

f. [j\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B1%2B%5Comega%7D)

Povratna informacija

Točan odgovor je: [{\pi \delta (\omega +1)}+{1 \over j ( \omega +1 ) }](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B%5Cpi%20%5Cdelta%20%28%5Comega%20%2B1%29%7D%2B%7B1%20%5Cover%20j%20%28%20%5Comega%20%2B1%20%29%20%7D)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) je [x( t ) = 4 + 2\sin(40\pi t + \frac{\pi}{3})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%204%20%2B%202%5Csin%2840%5Cpi%20t%20%2B%20%5Cfrac%7B%5Cpi%7D%7B3%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. [X_0=8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D8)

Koeficijent [X_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0) je srednja vrijednost signala, dakle [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)! tužan

B. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

C. [X_0=\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D%5Cfrac%7B%5Cpi%7D%7B3%7D)

D. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

Povratna informacija

Točan odgovor je: [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) = \delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

d. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

e. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

**Pitanje 8**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=e^{jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D). Odredite FAZU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

c. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

d. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo vremenski diskretan Fourierov red (DTFS) signala perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N) za kojeg vrijedi [x( n ) = x( kN-n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20x%28%20kN-n%20%29) gdje je [k\in\mathbb{Z}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%5Cin%5Cmathbb%7BZ%7D). Transformacija takvog signala je:

Odaberite jedan odgovor:

a. kompleksan antisimetrični niz

b. čisto imaginaran periodičan niz

c. kompleksan niz

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. čisto realan periodičan niz

f. kompleksan simetrični niz

Povratna informacija

Točan odgovor je: čisto realan periodičan niz

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t ) = 4 + 2\cos ( 40\pi t - \frac{\pi}{3})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%204%20%2B%202%5Ccos%20%28%2040%5Cpi%20t%20-%20%5Cfrac%7B%5Cpi%7D%7B3%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Kut [\theta_{1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_%7B1%7D) prvog harmonika iznosi:

Odaberite jedan odgovor:

A. [\theta_1=-\frac{\pi}{4}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B4%7D)

Red ima samo jednu harmonijsku komponentu čiji kut tražimo. Odmah je vidiljivo da je kut [-\frac\pi3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cfrac%5Cpi3). tužan

B. [\theta_1=-\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B3%7D)

C. [\theta_1=\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D%5Cfrac%7B%5Cpi%7D%7B3%7D)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [\theta_1=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

F. [\theta_1=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D4)

Povratna informacija

Točan odgovor je: [\theta_1=-\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B3%7D)

Promatramo vremenski diskretnu Fourierovu transformaciju (DTFT) realnog signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*(e^{j\Omega}) = X(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7Bj%5COmega%7D%29%20)

B. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

C. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

D. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

Povratna informacija

Točan odgovor je: [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \sin( t ) + \sin (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Csin%28%20t%20%29%20%2B%20%5Csin%20%284t%2B%5Cpi%2F3%20%29). Odredite FAZU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

b. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

e. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

**Pitanje 3**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

c. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

f. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 4**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite imaginarni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [-1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1-%5Comega%7D)

e. [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

f. [1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1%2B%5Comega%7D)

Povratna informacija

Točan odgovor je: [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},4,0,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C4%2C0%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

B. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

C. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

D. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

E. [X_k=\{\underline{4},4j,-4,-4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C4j%2C-4%2C-4j%5C%7D)

F. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

**Pitanje 6**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

c. [\pi \delta (\omega +1)+\frac{j}{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20%2B1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%2B1%7D)

d. [j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B1-%5Comega%7D)

e. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

f. [-j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-j%5Cover%7B1-%5Comega%7D)

Povratna informacija

Točan odgovor je: [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

**Pitanje 7**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},0,0,4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C0%2C0%2C4%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

B. [X_k=\{\underline{4},-4j,-4,4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C-4j%2C-4%2C4j%5C%7D)

C. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

F. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Za amplitudni spektar [|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7CX%28j%5Comega%29%7C) vremenski kontinuirane Fourierove transformacije (CTFT) realnog aperiodičkog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) vrijedi ([a](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=a) je realna konstanta):

Odaberite jedan odgovor:

A. [ |X(-j\omega)|=|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28-j%5Comega%29%7C%3D%7CX%28j%5Comega%29%7C)

B. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

C. [ |X(j\omega)|=-\frac{1}{a}|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%3D-%5Cfrac%7B1%7D%7Ba%7D%7CX%28j%5Comega%29%7C)

D. [ |X(-j\omega)|=\frac{1}{a}|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28-j%5Comega%29%7C%3D%5Cfrac%7B1%7D%7Ba%7D%7CX%28j%5Comega%29%7C)

E. [ |X(-j\omega)|=a|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28-j%5Comega%29%7C%3Da%7CX%28j%5Comega%29%7C)

Krivo!

F. [ |X(-j\omega)|=-|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28-j%5Comega%29%7C%3D-%7CX%28j%5Comega%29%7C)

Povratna informacija

Točan odgovor je: [ |X(-j\omega)|=|X(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28-j%5Comega%29%7C%3D%7CX%28j%5Comega%29%7C)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretnu Fourierovu transformaciju (DTFT) linearne konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29). Spektar linearne konvolucije jest:

Odaberite jedan odgovor:

A. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

B. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

C. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [ {1\over2\pi}X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7B1%5Cover2%5Cpi%7DX%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

F. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

Povratna informacija

Točan odgovor je: [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite AMPLITUDU spektra za [k=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D2) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak DVOSTRUKOM temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

c. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

d. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

e. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

Promatramo signal [x( n ) =\delta(n-1) + \delta( n ) +\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%20%2B%20%5Cdelta%28%20n%20%29%20%2B%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za amplitudni spektar dobivamo:

Odaberite jedan odgovor:

a. [A(\Omega)=\bigl|2\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

b. [A(\Omega)=\bigl|\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

c. [A(\Omega)=\bigl|2\cos(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%5Cbigr%7C)

d. [A(\Omega)=\bigl|2\cos(\Omega)+2\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B2%5Cbigr%7C)

e. [A(\Omega)=\bigl|\cos(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Ccos%28%5COmega%29%5Cbigr%7C)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [A(\Omega)=\bigl|2\cos(\Omega)+1\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Ccos%28%5COmega%29%2B1%5Cbigr%7C)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) = \delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

b. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

c. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

**Pitanje 3**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski kontinuiranu Fourierovu transformaciju (CTFT) realnog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*(j\omega)=X(j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28j%5Comega%29)

B. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

C. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

D. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

Povratna informacija

Točan odgovor je: [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

**Pitanje 4**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \sin( t ) + \sin (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Csin%28%20t%20%29%20%2B%20%5Csin%20%284t%2B%5Cpi%2F3%29). Odredite FAZU spektra za [k=-4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-4) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [-\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F6)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

e. [\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F6)

f. [-\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F3)

Povratna informacija

Točan odgovor je: [\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F6)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},0,4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C0%2C4%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

B. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

C. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

D. [X_k=\{\underline{4},-4,4,-4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C-4%2C4%2C-4%5C%7D)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

**Pitanje 6**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \sin( t ) + \sin (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Csin%28%20t%20%29%20%2B%20%5Csin%20%284t%2B%5Cpi%2F3%20%29). Odredite FAZU spektra prvog harmonika za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

e. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

f. [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

Povratna informacija

Točan odgovor je: [-\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F2)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 ) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29%20). Odredite FAZU spektra prvog harmonika za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

b. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

e. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=2\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D2%5Comega) odredite transformaciju signala [x( 2t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%202t%20%29)?

Odaberite jedan odgovor:

a. [\omega/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega%2F2)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega)

d. [4\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=4%5Comega)

e. [j\omega/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Comega%2F2)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [\omega/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega%2F2)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{2},0,2,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B2%7D%2C0%2C2%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

a. [X_k=\{\underline{1},0,1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C1%2C0%5C%7D)

b. [X_k=\{\underline{4},0,-4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C-4%2C0%5C%7D)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [X_k=\{\underline{4j},0,4j,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4j%7D%2C0%2C4j%2C0%5C%7D)

e. [X_k=\{\underline{1},0,-1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C-1%2C0%5C%7D)

f. [X_k=\{\underline{4},0,4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C4%2C0%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},0,1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C1%2C0%5C%7D)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite imaginarni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. ništa od navedenog

b. [\pi\delta(\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega-1%29)

c. [-1\over{\omega-1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B%5Comega-1%7D)

d. [\pi\delta(\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega%2B1%29)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [-1\over{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B%5Comega%2B1%7D)

Povratna informacija

Točan odgovor je: [-1\over{\omega-1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B%5Comega-1%7D)

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t ) = -2 + 3\sin(5\pi t - \frac{\pi}{2})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%20-2%20%2B%203%5Csin%285%5Cpi%20t%20-%20%5Cfrac%7B%5Cpi%7D%7B2%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

B. [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

C. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

D. [X_0=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-1)

E. [X_0=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

Koeficijent [c_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=c_0) je srednja vrijednost signala, dakle [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)! tužan

F. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretnu Fourierovu transformaciju (DTFT) linearne konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29). Spektar linearne konvolucije jest:

Odaberite jedan odgovor:

A. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

B. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

E. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

F. [ {1\over2\pi}X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7B1%5Cover2%5Cpi%7DX%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

Povratna informacija

Točan odgovor je: [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

**Pitanje 3**

Netočno

Broj bodova: -0,20 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1)-\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29-%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

c. [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

d. [\phi(\Omega)={\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%7B%5Cpi%5Cover2%7D)

e. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D)

f. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

**Pitanje 4**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. [j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B1-%5Comega%7D)

b. [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [-j\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-j%5Cover%7B1-%5Comega%7D)

e. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

f. [\pi \delta (\omega +1)+\frac{j}{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20%2B1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%2B1%7D)

Povratna informacija

Točan odgovor je: [\pi \delta (\omega -1)+\frac{j}{\omega -1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%20-1%29%2B%5Cfrac%7Bj%7D%7B%5Comega%20-1%7D)

**Pitanje 5**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo vremenski diskretan Fourierov red (DTFS) signala perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N) za kojeg vrijedi [x( n ) = -x( kN-n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20-x%28%20kN-n%20%29) gdje je [k\in\mathbb{Z}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%5Cin%5Cmathbb%7BZ%7D). Transformacija takvog signala je:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. kompleksan aperiodičan antisimetrični niz

c. kompleksan aperiodičan niz

d. kompleksan aperiodičan simetrični niz

e. čisto realan periodičan niz

f. čisto imaginaran periodičan niz

Povratna informacija

Točan odgovor je: čisto imaginaran periodičan niz

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite FAZU spektra za [k=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D4) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

c. [-\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F3)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

f. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

Povratna informacija

Točan odgovor je: [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan Fourierov red (DTFS) perodične konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29) perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Spektar periodične konvolucije jest:

Odaberite jedan odgovor:

A. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

B. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

E. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

F. [ X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X_kY_k%20)

Povratna informacija

Točan odgovor je: [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite imaginarni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( -t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20-t%20%29).

Odaberite jedan odgovor:

a. [1\over{\omega-1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega-1%7D)

b. [\pi\delta(\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega-1%29)

c. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

d. [1\over{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega%2B1%7D)

e. [\pi\delta(\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega%2B1%29)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [1\over{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega%2B1%7D)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite AMPLITUDU spektra za [k=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D2) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak DVOSTRUKOM temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

b. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

e. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

f. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da su spektri (CTFT) vremenski kontinuiranih signala [x_1( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_1%28%20t%20%29) i [x_2( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_2%28%20t%20%29) jednaki [X_1( j\omega )=5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_1%28%20j%5Comega%20%29%3D5%5Comega) i [X_2( j\omega )=2/\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_2%28%20j%5Comega%20%29%3D2%2F%5Comega) odredite vremenski kontinuiranu Fourierovu transformaciju (CTFT) konvolucije [x_1( t )*x_2( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x_1%28%20t%20%29%2Ax_2%28%20t%20%29).

Odaberite jedan odgovor:

a. [10\over\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10%5Cover%5Comega)

b. [5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega)

c. [{5\omega^2+2}\over10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B5%5Comega%5E2%2B2%7D%5Cover10)

d. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

e. [10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [10](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=10)

Odredite amplitudni spektar vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [j\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B1%2B%5Comega%7D)

c. [1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1%2B%5Comega%7D)

d. [-j\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-j%5Cover%7B1%2B%5Comega%7D)

e. ništa od navedenog

f. [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

Povratna informacija

Točan odgovor je: ništa od navedenog

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1)-\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29-%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [\phi(\Omega)={\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%7B%5Cpi%5Cover2%7D)

c. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D)

d. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

e. [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 ) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29%20). Odredite AMPLITUDU spektra prvog harmonika za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

b. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

e. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 4**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29). Odredite AMPLITUDU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

b. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

c. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

d. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite AMPLITUDU spektra za [k=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D2) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak DVOSTRUKOM temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

d. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

e. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

f. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite fazni spektar vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. ništa od navedenoga

b. [-\infty](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cinfty)

c. [\pi/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F2)

d. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

e. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: ništa od navedenoga

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},0,0,4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C0%2C0%2C4%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

B. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

C. [X_k=\{\underline{4},-4j,-4,4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C-4j%2C-4%2C4j%5C%7D)

D. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

E. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

F. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretnu Fourierovu transformaciju (DTFT) realnog signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

B. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

C. [ X^*(e^{j\Omega}) = X(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7Bj%5COmega%7D%29%20)

D. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

Povratna informacija

Točan odgovor je: [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [x( j\omega )=5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20j%5Comega%20%29%3D5%5Comega) odredite transformaciju signala [x(t-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-2%29)?

Odaberite jedan odgovor:

a. [5(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega%2B2%29)

b. [5\omega e^{2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B2j%5Comega%7D)

c. [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [5(\omega-2)e^{j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29e%5E%7Bj%5Comega%7D)

f. [5(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29)

Povratna informacija

Točan odgovor je: [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},4,0,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C4%2C0%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{4},4j,-4,-4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C4j%2C-4%2C-4j%5C%7D)

B. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

E. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

F. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

Promatramo vremenski diskretnu Fourierovu transformaciju (DTFT) linearne konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29). Spektar linearne konvolucije jest:

Odaberite jedan odgovor:

A. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

B. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

C. [ {1\over2\pi}X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7B1%5Cover2%5Cpi%7DX%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

D. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

Povratna informacija

Točan odgovor je: [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 ) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29%20). Odredite AMPLITUDU spektra prvog harmonika za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

b. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

c. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

d. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je [ |X(j\omega)| ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%20) amplitudni spektar signala [ x( t ) = \cos( t ) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20x%28%20t%20%29%20%3D%20%5Ccos%28%20t%20%29%20) i ako je [|G(j\omega)|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7CG%28j%5Comega%29%7C) amplitudni spektar signala [ g( t ) = x(t+3) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20g%28%20t%20%29%20%3D%20x%28t%2B3%29%20) onda vrijedi (samo jedan izraz je točan):

Odaberite jedan odgovor:

A. [ |X(j\omega)| + |G(j\omega)| = 0 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%20%2B%20%7CG%28j%5Comega%29%7C%20%3D%200%20)

B. [ |X(j\omega)| + |G(j\omega)| = 2 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%20%2B%20%7CG%28j%5Comega%29%7C%20%3D%202%20)

C. [ |G(j\omega)| + 2 |X(j\omega)| = 0 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CG%28j%5Comega%29%7C%20%2B%202%20%7CX%28j%5Comega%29%7C%20%3D%200%20)

D. [ |G(j\omega)| - 2 |X(j\omega)| = 0 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CG%28j%5Comega%29%7C%20-%202%20%7CX%28j%5Comega%29%7C%20%3D%200%20)

Ne! Prisjetite se teorema o pomaku. Kako su amplitudni spektri jednaki njihova razlika je nula. tužan

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [ |X(j\omega)| - |G(j\omega)| = 0 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%20-%20%7CG%28j%5Comega%29%7C%20%3D%200%20)

Povratna informacija

Točan odgovor je: [ |X(j\omega)| - |G(j\omega)| = 0 ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7CX%28j%5Comega%29%7C%20-%20%7CG%28j%5Comega%29%7C%20%3D%200%20)

**Pitanje 4**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{4},0,0,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B4%7D%2C0%2C0%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{4},4,4,4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C4%2C4%2C4%5C%7D)

B. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

C. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

D. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

E. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

F. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog signala perioda četiri čiji jedan period vremenski diskretnog Fourierovog reda (DTFS) je [\{\underline{0},2,0,2\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C2%2C0%2C2%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

a. [x( n ) =\{\underline{4j},0,-4j,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B4j%7D%2C0%2C-4j%2C0%5C%7D)

b. [x( n ) =\{\underline{4},0,-4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C-4%2C0%5C%7D)

c. [x( n ) =\{\underline{4},0,4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C4%2C0%5C%7D)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [x( n ) =\{\underline{1},0,1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C1%2C0%5C%7D)

f. [x( n ) =\{\underline{1},0,-1,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C0%2C-1%2C0%5C%7D)

Povratna informacija

Točan odgovor je: [x( n ) =\{\underline{4},0,-4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B4%7D%2C0%2C-4%2C0%5C%7D)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1)+\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%2B%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

d. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

e. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

f. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite realni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. [1\over{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega%2B1%7D)

b. [\pi\delta(\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega-1%29)

c. ništa od navedenog

d. [\pi\delta(\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega%2B1%29)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [1\over{\omega-1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega-1%7D)

Povratna informacija

Točan odgovor je: [\pi\delta(\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega-1%29)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

b. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

c. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

d. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite amplitudni spektar vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [1\over{|1-\omega|}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%7C1-%5Comega%7C%7D)

c. [\pi \delta (\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega-1%29)

d. [j\over{\sqrt{1+\omega^2}}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B%5Csqrt%7B1%2B%5Comega%5E2%7D%7D)

e. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

f. ništa od navedenog

Povratna informacija

Točan odgovor je: ništa od navedenog

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t ) = -2 + 3\sin(5\pi t - \frac{\pi}{2})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%20-2%20%2B%203%5Csin%285%5Cpi%20t%20-%20%5Cfrac%7B%5Cpi%7D%7B2%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

B. [X_0=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

C. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

D. [X_0=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-1)

Koeficijent [c_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=c_0) je srednja vrijednost signala, dakle [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)! tužan

E. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

F. [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

Povratna informacija

Točan odgovor je: [X_0=-2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D-2)

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [x( j\omega )=5\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20j%5Comega%20%29%3D5%5Comega) odredite transformaciju signala [x(t-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-2%29)?

Odaberite jedan odgovor:

a. [5(\omega-2)e^{j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29e%5E%7Bj%5Comega%7D)

b. [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

c. [5(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega-2%29)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [5(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%28%5Comega%2B2%29)

f. [5\omega e^{2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B2j%5Comega%7D)

Povratna informacija

Točan odgovor je: [5\omega e^{-2j\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5%5Comega%20e%5E%7B-2j%5Comega%7D)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

d. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

e. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1)-\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29-%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)={\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%7B%5Cpi%5Cover2%7D)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

d. [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D)

e. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

f. [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=+{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%2B%7B%5Cpi%5Cover2%7D) za [\Omega<0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3C0) i [\phi(\Omega)=-{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%7B%5Cpi%5Cover2%7D) za [\Omega>0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5COmega%3E0)

**Pitanje 4**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretni Fourierov red (DTFS) realnog signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29). Za spektar vrijedi:

Odaberite jedan odgovor:

A. [ X^*_k = X_{k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%20%3D%20X_%7Bk%7D%20)

B. [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [ X^*(j\omega)=X(-j\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28j%5Comega%29%3DX%28-j%5Comega%29)

E. [ X^*(e^{j\Omega}) = X(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7Bj%5COmega%7D%29%20)

F. [ X^*(e^{j\Omega}) = X(e^{-j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A%28e%5E%7Bj%5COmega%7D%29%20%3D%20X%28e%5E%7B-j%5COmega%7D%29%20)

Povratna informacija

Točan odgovor je: [ X^*_k=X_{-k} ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%5E%2A_k%3DX_%7B-k%7D%20)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite FAZU spektra za [k=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D4) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

b. [-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [-\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F3)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

Povratna informacija

Točan odgovor je: [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan Fourierov red (DTFS) perodične konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29) perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Spektar periodične konvolucije jest:

Odaberite jedan odgovor:

A. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

B. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

C. [ X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X_kY_k%20)

D. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

E. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

F. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

Povratna informacija

Točan odgovor je: [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski kontinuiranu Fourierovu transformaciju (CTFT) linearne konvolucije signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) i [y( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20t%20%29). Spektar linearne konvolucije jest:

Odaberite jedan odgovor:

A. [ {1\over2\pi}X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20%7B1%5Cover2%5Cpi%7DX%28j%5Comega%29Y%28j%5Comega%29%20)

B. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

C. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

F. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

Povratna informacija

Točan odgovor je: [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) = \delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

b. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

c. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

**Pitanje 9**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t ) = 4 - 2\cos(50\pi t + \frac{\pi}{2})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%204%20-%202%5Ccos%2850%5Cpi%20t%20%2B%20%5Cfrac%7B%5Cpi%7D%7B2%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Kut [\theta_{1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_%7B1%7D) prvog harmonika iznosi:

Odaberite jedan odgovor:

A. [\theta_1=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

Bravo! smijeh od uha do uha

B. [\theta_1=\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D%5Cfrac%7B%5Cpi%7D%7B2%7D)

C. [\theta_1=\frac{\pi}{4}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D%5Cfrac%7B%5Cpi%7D%7B4%7D)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [\theta_1=-\frac{\pi}{4}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B4%7D)

F. [\theta_1=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D4)

Povratna informacija

Točan odgovor je: [\theta_1=-\frac{\pi}{2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Ctheta_1%3D-%5Cfrac%7B%5Cpi%7D%7B2%7D)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Spektar (CTFT) vremenski kontinuiranog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) je [X(j\omega)=e^{-j2\omega}\bigl(\step(\omega)-\step(\omega-2)\bigr)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28j%5Comega%29%3De%5E%7B-j2%5Comega%7D%5Cbigl%28%5Cstep%28%5Comega%29-%5Cstep%28%5Comega-2%29%5Cbigr%29). Izračunajte energiju pomaknutog signala [x(t-3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-3%29).

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [{1\over{20j\pi}}(e^{20j}-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B1%5Cover%7B20j%5Cpi%7D%7D%28e%5E%7B20j%7D-1%29)

c. [\infty](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cinfty)

d. Energija se ne može odrediti jer je spektar kompleksan.

e. [{1\over{-20j\pi}}(e^{-20j}-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7B1%5Cover%7B-20j%5Cpi%7D%7D%28e%5E%7B-20j%7D-1%29)

f. [1/\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F%5Cpi)

Povratna informacija

Točan odgovor je: [1/\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F%5Cpi)

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%29). Odredite AMPLITUDU spektra za [k=-4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-4) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

b. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

c. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

d. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

e. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan Fourierov red (DTFS) perodične konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29) perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Spektar periodične konvolucije jest:

Odaberite jedan odgovor:

A. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

B. [ X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X_kY_k%20)

C. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

F. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

Povratna informacija

Točan odgovor je: [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{4},0,0,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B4%7D%2C0%2C0%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

B. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

C. [X_k=\{\underline{4},4,4,4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C4%2C4%2C4%5C%7D)

D. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

E. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

F. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

**Pitanje 4**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=5j(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D5j%28%5Comega-2%29) odredite transformaciju signala [x( t )e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29e%5E%7B-j2t%7D)?

Odaberite jedan odgovor:

a. [5j(\omega-4)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-4%29)

b. [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

c. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [\omega+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega%2B2)

f. [5j(\omega-2)e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-2%29e%5E%7B-j2t%7D)

Povratna informacija

Točan odgovor je: [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite realni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( -t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20-t%20%29).

Odaberite jedan odgovor:

a. ništa od navedenog

b. [1\over{\omega+1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega%2B1%7D)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi\delta(\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega-1%29)

e. [1\over{\omega-1}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%5Comega-1%7D)

f. [\pi\delta(\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega%2B1%29)

Povratna informacija

Točan odgovor je: [\pi\delta(\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%5Cdelta%28%5Comega%2B1%29)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=e^{-2j\omega}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3De%5E%7B-2j%5Comega%7D%5Cstep%28%5Comega%29) odredite transformaciju signala [x(t-3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28t-3%29)?

Odaberite jedan odgovor:

a. [e^{-3j\omega}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-3j%5Comega%7D%5Cstep%28%5Comega%29)

b. [e^{-5j\omega}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-5j%5Comega%7D%5Cstep%28%5Comega%29)

c. [e^{-2j(\omega-3)}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-2j%28%5Comega-3%29%7D%5Cstep%28%5Comega%29)

d. [e^{-2j\omega}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-2j%5Comega%7D%5Cstep%28%5Comega%29)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [e^{-2j(\omega+3)}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-2j%28%5Comega%2B3%29%7D%5Cstep%28%5Comega%29)

Povratna informacija

Točan odgovor je: [e^{-5j\omega}\step(\omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=e%5E%7B-5j%5Comega%7D%5Cstep%28%5Comega%29)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo dva signala [x( n ) =\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D) i [y( n ) =\{1,\underline{1},1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29%20%3D%5C%7B1%2C%5Cunderline%7B1%7D%2C1%2C1%5C%7D) za koja je poznato da imaju sve uzorke jednake nuli osim zadanih (podcrtani uzorak odgovara indeksu nula). Za pripadne spektre [X(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29) i [Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=Y%28e%5E%7Bj%5COmega%7D%29) dobivene vremenski diskretnom Fourierovom transformacijom (DTFT) vrijedi:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [X(e^{j\Omega})=e^{j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%7DY%28e%5E%7Bj%5COmega%7D%29)

c. [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

d. [X(e^{j\Omega})=e^{-j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

e. [X(e^{j\Omega})=e^{-j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%7DY%28e%5E%7Bj%5COmega%7D%29)

f. ništa od navedenoga

Povratna informacija

Točan odgovor je: [X(e^{j\Omega})=e^{-j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) je [x( t ) = 4 + 2\sin(40\pi t + \frac{\pi}{3})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%204%20%2B%202%5Csin%2840%5Cpi%20t%20%2B%20%5Cfrac%7B%5Cpi%7D%7B3%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

B. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [X_0=8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D8)

E. [X_0=\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D%5Cfrac%7B%5Cpi%7D%7B3%7D)

Koeficijent [X_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0) je srednja vrijednost signala, dakle [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)! tužan

F. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

Povratna informacija

Točan odgovor je: [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

b. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

c. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

d. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo dva vremenski diskretna signala [x( n ) =\{1,\underline{1},1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5C%7B1%2C%5Cunderline%7B1%7D%2C1%2C1%5C%7D) i [y( n ) =\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29%20%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D) za koja je poznato da imaju sve uzorke jednake nuli osim zadanih (podcrtani uzorak odgovara indeksu nula). Za pripadne spektre [X(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29) i [Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=Y%28e%5E%7Bj%5COmega%7D%29) dobivene vremenski diskretnom Fourierovom transformacijom (DTFT) vrijedi:

Odaberite jedan odgovor:

a. [X(e^{j\Omega})=e^{j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%7DY%28e%5E%7Bj%5COmega%7D%29)

b. [X(e^{j\Omega})=e^{-j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

c. [X(e^{j\Omega})=e^{-j}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7B-j%7DY%28e%5E%7Bj%5COmega%7D%29)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. ništa od navedenoga

f. [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

Povratna informacija

Točan odgovor je: [X(e^{j\Omega})=e^{j\Omega}Y(e^{j\Omega})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28e%5E%7Bj%5COmega%7D%29%3De%5E%7Bj%5COmega%7DY%28e%5E%7Bj%5COmega%7D%29)

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 ) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29%20). Odredite AMPLITUDU spektra prvog harmonika za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

b. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

c. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

d. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

e. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

f. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 2**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo vremenski diskretan Fourierov red (DTFS) signala perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N) za kojeg vrijedi [x( n ) = x( kN-n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20x%28%20kN-n%20%29) gdje je [k\in\mathbb{Z}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%5Cin%5Cmathbb%7BZ%7D). Transformacija takvog signala je:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. čisto imaginaran periodičan niz

c. kompleksan simetrični niz

d. kompleksan niz

e. kompleksan antisimetrični niz

f. čisto realan periodičan niz

Povratna informacija

Točan odgovor je: čisto realan periodičan niz

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za amplitudni spektar dobivamo:

Odaberite jedan odgovor:

a. [A(\Omega)=\cos(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Ccos%28%5COmega%29)

b. [A(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D0)

c. [A(\Omega)=2\cos(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29)

d. [A(\Omega)=2\cos(\Omega)+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29%2B2)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [A(\Omega)=\cos(\Omega)+1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Ccos%28%5COmega%29%2B1)

Povratna informacija

Točan odgovor je: [A(\Omega)=2\cos(\Omega)+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29%2B2)

**Pitanje 4**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29). Odredite AMPLITUDU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

b. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

c. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

d. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) = \delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%20%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za osnovni period FAZNOG spektra ([-\pi<\Omega<\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%3C%5COmega%3C%5Cpi)) dobivamo:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

c. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi)

d. [\phi(\Omega)=-\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D-%5Cpi)

e. [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

f. [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0) za [|\Omega|<{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3C%7B%5Cpi%5Cover2%7D) i [\phi(\Omega)=\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D%5Cpi) za [|\Omega|>{\pi\over2}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%7C%5COmega%7C%3E%7B%5Cpi%5Cover2%7D)

Povratna informacija

Točan odgovor je: [\phi(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cphi%28%5COmega%29%3D0)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite amplitudni spektar vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{jt}\mu(-t)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7Bjt%7D%5Cmu%28-t%29).

Odaberite jedan odgovor:

a. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

b. [\pi \delta (\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega-1%29)

c. [1\over{|1-\omega|}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B%7C1-%5Comega%7C%7D)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. ništa od navedenog

f. [j\over{\sqrt{1+\omega^2}}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=j%5Cover%7B%5Csqrt%7B1%2B%5Comega%5E2%7D%7D)

Povratna informacija

Točan odgovor je: ništa od navedenog

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=3(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D3%28%5Comega%2B2%29) odredite transformaciju signala [x( t )e^{j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29e%5E%7Bj2t%7D)?

Odaberite jedan odgovor:

a. [3(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B2%29)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [3(\omega+2) e^{j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B2%29%20e%5E%7Bj2t%7D)

d. [3(\omega+4)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B4%29)

e. [3\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%5Comega)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [3\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%5Comega)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite realni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi \delta (\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%2B1%29)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

d. [\pi \delta (\omega-1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega-1%29)

e. [1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1%2B%5Comega%7D)

f. [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

Povratna informacija

Točan odgovor je: [\pi \delta (\omega+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%20%5Cdelta%20%28%5Comega%2B1%29)

**Pitanje 9**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=-e^{-jt}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D-e%5E%7B-jt%7D). Odredite AMPLITUDU spektra za [k=1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

b. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

c. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

d. [2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2)

e. [\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi)

f. [1/2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%2F2)

Povratna informacija

Točan odgovor je: [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

**Pitanje 10**

Točno

Broj bodova: 1,00 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},0,0,4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C0%2C0%2C4%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

B. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

C. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [X_k=\{\underline{4},-4j,-4,4j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C-4j%2C-4%2C4j%5C%7D)

F. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=5j(\omega-2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D5j%28%5Comega-2%29) odredite transformaciju signala [x( t )e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29e%5E%7B-j2t%7D)?

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

c. [5j(\omega-2)e^{-j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-2%29e%5E%7B-j2t%7D)

d. [\omega+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Comega%2B2)

e. [5j(\omega-4)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%28%5Comega-4%29)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [5j\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=5j%5Comega)

**Pitanje 2**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan signal [x( n ) =\delta(n-1)-\delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29-%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za AMPLITUDNI spektar dobivamo:

Odaberite jedan odgovor:

a. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

b. [A(\Omega)=-2j\sin(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D-2j%5Csin%28%5COmega%29)

c. [A(\Omega)=\bigl|2\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Csin%28%5COmega%29%5Cbigr%7C)

d. [A(\Omega)=\bigl|\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C%5Csin%28%5COmega%29%5Cbigr%7C)

e. [A(\Omega)=2j\sin(j\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2j%5Csin%28j%5COmega%29)

f. [A(\Omega)=2\sin(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Csin%28%5COmega%29)

Povratna informacija

Točan odgovor je: [A(\Omega)=\bigl|2\sin(\Omega)\bigr|](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Cbigl%7C2%5Csin%28%5COmega%29%5Cbigr%7C)

**Pitanje 3**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Razmatramo Fourierov red (CTFS) vremenski kontinuiranog signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) je [x( t ) = 4 + 2\sin(40\pi t + \frac{\pi}{3})](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%20%3D%204%20%2B%202%5Csin%2840%5Cpi%20t%20%2B%20%5Cfrac%7B%5Cpi%7D%7B3%7D%29) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljnom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29). Koeficijent [X_{0}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_%7B0%7D) rastava u red iznosi:

Odaberite jedan odgovor:

A. [X_0=\frac{\pi}{3}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D%5Cfrac%7B%5Cpi%7D%7B3%7D)

B. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

C. [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

D. [X_0=8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D8)

E. [X_0=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D0)

Koeficijent [X_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0) je srednja vrijednost signala, dakle [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)! tužan

F. [X_0=2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D2)

Povratna informacija

Točan odgovor je: [X_0=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_0%3D4)

**Pitanje 4**

Netočno

Broj bodova: 0,00 od 1,00

Označi pitanje

Tekst pitanja

Promatramo signal [x( n ) =\delta(n-1) + 2\delta( n ) + \delta(n+1)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29%20%3D%5Cdelta%28n-1%29%20%2B%202%5Cdelta%28%20n%20%29%20%2B%20%5Cdelta%28n%2B1%29) za kojeg računamo vremenski diskretnu Fourierovu transformaciju (DTFT). Za amplitudni spektar dobivamo:

Odaberite jedan odgovor:

a. [A(\Omega)=\cos(\Omega)+1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Ccos%28%5COmega%29%2B1)

b. [A(\Omega)=2\cos(\Omega)+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29%2B2)

c. [A(\Omega)=2\cos(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29)

d. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

e. [A(\Omega)=\cos(\Omega)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D%5Ccos%28%5COmega%29)

f. [A(\Omega)=0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D0)

Povratna informacija

Točan odgovor je: [A(\Omega)=2\cos(\Omega)+2](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=A%28%5COmega%29%3D2%5Ccos%28%5COmega%29%2B2)

**Pitanje 5**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Promatramo vremenski diskretan Fourierov red (DTFS) perodične konvolucije signala [x( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20n%20%29) i [y( n )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=y%28%20n%20%29) perioda [N](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Spektar periodične konvolucije jest:

Odaberite jedan odgovor:

A. [ X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X_kY_k%20)

B. [ X(j\omega)Y(j\omega) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28j%5Comega%29Y%28j%5Comega%29%20)

C. [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

D. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

E. [ X(e^{j\Omega})Y(e^{j\Omega}) ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20X%28e%5E%7Bj%5COmega%7D%29Y%28e%5E%7Bj%5COmega%7D%29%20)

F. [ T_0 X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20T_0%20X_kY_k%20)

Povratna informacija

Točan odgovor je: [ N X_kY_k ](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%20N%20X_kY_k%20)

**Pitanje 6**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Izračunajte jedan period vremenski diskretnog Fourierovog reda (DTFS) signala perioda četiri čiji jedan period je [\{\underline{0},0,4,0\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5C%7B%5Cunderline%7B0%7D%2C0%2C4%2C0%5C%7D). Podcrtani član odgovara indeksu nula.

Odaberite jedan odgovor:

A. [X_k=\{\underline{1},j,-1,-j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2Cj%2C-1%2C-j%5C%7D)

B. [X_k=\{\underline{1},-j,-1,j\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-j%2C-1%2Cj%5C%7D)

C. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

D. [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

E. [X_k=\{\underline{4},-4,4,-4\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B4%7D%2C-4%2C4%2C-4%5C%7D)

F. [X_k=\{\underline{1},1,1,1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C1%2C1%2C1%5C%7D)

Povratna informacija

Točan odgovor je: [X_k=\{\underline{1},-1,1,-1\}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X_k%3D%5C%7B%5Cunderline%7B1%7D%2C-1%2C1%2C-1%5C%7D)

**Pitanje 7**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Ako je poznato da je vremenski kontinuirana Fourierova transformacija (CTFT) signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29) jednaka [X( j\omega )=3(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=X%28%20j%5Comega%20%29%3D3%28%5Comega%2B2%29) odredite transformaciju signala [x( t )e^{j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29e%5E%7Bj2t%7D)?

Odaberite jedan odgovor:

a. [3\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%5Comega)

b. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [3(\omega+4)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B4%29)

e. [3(\omega+2)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B2%29)

f. [3(\omega+2) e^{j2t}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%28%5Comega%2B2%29%20e%5E%7Bj2t%7D)

Povratna informacija

Točan odgovor je: [3\omega](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=3%5Comega)

**Pitanje 8**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \cos( t ) + \cos (4t+\pi/3 )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Ccos%28%20t%20%29%20%2B%20%5Ccos%20%284t%2B%5Cpi%2F3%20%29). Odredite AMPLITUDU spektra za [k=-1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D-1) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [0.8](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.8)

b. [2\pi](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=2%5Cpi)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [0.5](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.5)

e. [1](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1)

f. [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

Povratna informacija

Točan odgovor je: [0.4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0.4)

**Pitanje 9**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Odredite imaginarni dio spektra vremenski kontinuirane Fourierove transformacije (CTFT) signala [x( t )=e^{-jt}\mu( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3De%5E%7B-jt%7D%5Cmu%28%20t%20%29).

Odaberite jedan odgovor:

a. [1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1%2B%5Comega%7D)

b. [-1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1-%5Comega%7D)

c. [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

d. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

e. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

f. [1\over{1-\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=1%5Cover%7B1-%5Comega%7D)

Povratna informacija

Točan odgovor je: [-1\over{1+\omega}](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-1%5Cover%7B1%2B%5Comega%7D)

**Pitanje 10**

Netočno

Broj bodova: -0,25 od 1,00

Označi pitanje

Tekst pitanja

Zadan je vremenski kontinuirani signal [x( t )=0.8 \sin( t ) + \sin (4t+\pi/3)](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29%3D0.8%20%5Csin%28%20t%20%29%20%2B%20%5Csin%20%284t%2B%5Cpi%2F3%29). Odredite FAZU spektra za [k=4](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=k%3D4) pri rastavu u Fourierov red (CTFS) uz period rastava [T_0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=T_0) jednak temeljenom periodu signala [x( t )](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=x%28%20t%20%29).

Odaberite jedan odgovor:

a. [\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F6)

b. [-\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F6)

c. odustajem od odgovora (pitanje se boduje kao nedogovoreno s 0 bodova)

d. [\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=%5Cpi%2F3)

e. [-\pi/3](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F3)

f. [0](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=0)

Povratna informacija

Točan odgovor je: [-\pi/6](https://moodle.fer.hr/filter/tex/displaytex.php?texexp=-%5Cpi%2F6)