**7. DZ**

Konvolucija [\bigl(\step( t )\dirac(t-t_0)\dirac(t+t_0)+1\bigr) \ast \dirac(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\step(%20t%20)\dirac(t-t_0)\dirac(t+t_0)+1\bigr)%20\ast%20\dirac(t+t_0)) je:

The correct answer is: [1](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=1) .

Konvolucija vremenski kontinuiranih signala konačne energije NIJE distributivna operacija!

The correct answer is: **netočno**.

Linearna konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je definirana izrazom:

The correct answer is: [x( n )*y( n )=\sum_{i=-\infty}^{+\infty}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=-\infty%7d%5e%7b+\infty%7dx(i)y(n-i)) .

Konvolucija [(3n+2) \ast \delta( 3n-6 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(3n+2)%20\ast%20\delta(%203n-6%20)) je:

The correct answer is: [3n-4](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=3n-4) .

Neki složeni vremenski kontinuirani sustav se sastoji od paralenog spoja dvaju linearnih vremenski stalnih sustava čiji impulsni odzivi su [h_1( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h_1(%20t%20)) i [h_2( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h_2(%20t%20)). Ako na ulaz u paralelnog spoja dovedemo signal [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) što ćemo dobiti na izlazu?

The correct answer is: [x( t )\ast\bigl(  h_1( t ) + h_2( t )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)\ast\bigl(%20%20h_1(%20t%20)%20+%20h_2(%20t%20)\bigr)) .

Za koji od navedenih signala [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) vrijedi [x( t ) \ast y( t )=x(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)%20\ast%20y(%20t%20)=x(t+t_0))?

The correct answer is: [\dirac(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t+t_0)) .

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=-\infty}^{n}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=-\infty%7d%5e%7bn%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20n%20)) .

Konvolucija [\bigl(\sin( n ) \ast \delta( n+m )\bigr)\delta(n-m)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\sin(%20n%20)%20\ast%20\delta(%20n+m%20)\bigr)\delta(n-m)) je:

The correct answer is: [\sin(2m) \delta(n-m)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\sin(2m)%20\delta(n-m)) .

Samo jedno od navedenih svojstva jest svojstvo KOMUTATIVNOSTI konvolucije vremenski diskretnih signala konačne energije! Koje? [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)),[y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) i [z( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20n%20)) su vremenski diskretni signali dok je [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) cijeli broj.

The correct answer is: [x( n )*y( n )=y( n )*x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=y(%20n%20)*x(%20n%20)) .

Samo jedan od navedenih izraza jest definicija periodične (kružne ili cirkularne) konvolucija dva periodična vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne snage perioda [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T). Koji?

The correct answer is: [x( t )\ccnv{*}y( t )=\int_{0}^{T}x(\tau)y(t-\tau)\,d\tau ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)\ccnv%7b*%7dy(%20t%20)=\int_%7b0%7d%5e%7bT%7dx(\tau)y(t-\tau)\,d\tau%20) .

Konvolucija [\bigl(x( n )+y( n ) \ast \delta( n+5 )\bigr) \ast \delta( n-2 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(x(%20n%20)+y(%20n%20)%20\ast%20\delta(%20n+5%20)\bigr)%20\ast%20\delta(%20n-2%20)) je:

The correct answer is: [x( n-2 )+y( n+3 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n-2%20)+y(%20n+3%20)) .

Konvolucija [(a t+b) \ast \dirac(c t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(a%20t+b)%20\ast%20\dirac(c%20t-t_0)) ([t_0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t_0), [a](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=a), [b](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=b) i [c](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=c) su realne konstante, [t](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t) je vrijeme) je:

The correct answer is: **Ništa od navedenoga!.**

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{+\infty}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b+\infty%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .

Neka je vremenski kontinuirani signal [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20)) zadan kao [z( t )=x( t ) \ast y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20)=x(%20t%20)%20\ast%20y(%20t%20)). Čemu je jednako [x(t-t_0) \ast y(t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(t-t_0)%20\ast%20y(t-t_0))?

The correct answer is: [z( t-2t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t-2t_0)) .

Konvolucija vremenski diskretnih signala konačne energije NIJE asocijativna operacija!

The correct answer is: **netočno**.

Konvolucija vremenski kontinuiranih signala konačne energije NIJE distributivna operacija!

The correct answer is: **netočno**.

Linearna konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je definirana izrazom:

The correct answer is: [x( n )*y( n )=\sum_{i=-\infty}^{+\infty}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=-\infty%7d%5e%7b+\infty%7dx(i)y(n-i)) .

Za koju od navedenih funkcija [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) vrijedi [x( n ) \ast y( n )=x( n+1 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)%20\ast%20y(%20n%20)=x(%20n+1%20))?

The correct answer is: [\delta( n+1 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n+1%20)) .

Odziv vremenski kontinuiranog sustava [S\bigl[u( t )\bigr]=\int_{t}^{+\infty}u( \tau )\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20t%20)\bigr%5d=\int_%7bt%7d%5e%7b+\infty%7du(%20\tau%20)\,d\tau) na Diracovu distribuciju [\dirac( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(%20t%20)) je: The correct answer is: [h( t )=\step( -t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20t%20)=\step(%20-t%20)) .

Periodična (cirkularna ili kruža) konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne snage i perioda [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) je definirana izrazom:

The correct answer is: [x( t )\ccnv{*}y( t )=\int_{0}^{T}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)\ccnv%7b*%7dy(%20t%20)=\int_%7b0%7d%5e%7bT%7dx(\tau)y(t-\tau)\,d\tau) .

Impulsni odziv vremenski kontinuiranog linearn vremenski stalnog sustava je odziv mirnog sustava na:

The correct answer is: Diracovu distribuciju [\delta(t)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(t)) .

Za koju od navedenih funkcija [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) vrijedi [x( n ) \ast y( n )=x( n+1 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)%20\ast%20y(%20n%20)=x(%20n+1%20))?

The correct answer is: [\delta( n+1 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n+1%20)) .

Konvolucija vremenski diskretnih signala konačne energije NIJE asocijativna operacija!

The correct answer is: **netočno**.

Neka je vremenski kontinuirani signal [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20)) zadan kao [z( t )=x( t ) \ast y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20)=x(%20t%20)%20\ast%20y(%20t%20)). Čemu je jednako [x(t-t_0) \ast y(t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(t-t_0)%20\ast%20y(t-t_0))?

The correct answer is: [z( t-2t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t-2t_0)) .

Konvolucijom dva jedinična skoka [\step( t ) \ast \step( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\step(%20t%20)%20\ast%20\step(%20t%20)) dobivamo:

The correct answer is: [t  \step( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t%20%20\step(%20t%20)) .

Da bi konvolucija [x( n )\ast y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)\ast%20y(%20n%20)) bila jednaka [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) s kašnjenjem od [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) koraka tada [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) mora biti:

The correct answer is: [\delta( n-m )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-m%20)) .

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{0}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b0%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .

Linearna konvolucija dva vremenski kontinuirana i KAUZALNA signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije jest za [t<0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t%3c0) definirana izrazom:

The correct answer is: [x( t )*y( t )=0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=0) .

Samo jedno od navedenih svojstva jest svojstvo ASOCIJATIVNOSTI konvolucije vremenski kontinuiranih signala konačne energije! Koje? [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)), [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) i [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20))su vremenski diskretni signali dok je [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) realan broj.

The correct answer is: [x( t )*\bigl(y( t )*z( t )\bigr)=\bigl(x( t )*y( t )\bigr)*z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*\bigl(y(%20t%20)*z(%20t%20)\bigr)=\bigl(x(%20t%20)*y(%20t%20)\bigr)*z(%20t%20)) .

Linearna konvolucija dva vremenski diskretna i KAUZALNA signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je za [n\ge0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=n\ge0) definirana izrazom:

The correct answer is: [x( n )*y( n )=\sum_{i=0}^{n}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=0%7d%5e%7bn%7dx(i)y(n-i)) .

Konvolucija [\bigl(\sin( t ) \ast \dirac(t+2)\bigr)\dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\sin(%20t%20)%20\ast%20\dirac(t+2)\bigr)\dirac(t-1)) je:

The correct answer is: [\sin(3) \dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\sin(3)%20\dirac(t-1)) .

Promatramo li konvolucije vremenski diskretnih signala koji nemaju konačnu energiju tada svojstvo asocijativnosti konvolucije NE vrijedi!

The correct answer is: **točno**.

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{0}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b0%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .

Linearna konvolucija dva vremenski diskretna i KAUZALNA signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je za [n<0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=n%3c0) definirana izrazom:

The correct answer is: [x( n )*y( n )=0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=0) .

Konvolucija [\bigl(\step( t )\dirac(t-t_0)\dirac(t+t_0)+1\bigr) \ast \dirac(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\step(%20t%20)\dirac(t-t_0)\dirac(t+t_0)+1\bigr)%20\ast%20\dirac(t+t_0)) je:

The correct answer is: [1](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=1) .

Linearna konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije je definirana izrazom:

The correct answer is: [x( t )*y( t )=\int_{-\infty}^{+\infty}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b-\infty%7d%5e%7b+\infty%7dx(\tau)y(t-\tau)\,d\tau) .

Samo jedna od navedenih tvrdnji o konvoluciji vremenski kontinuiranih signala konačne enerijge je ispravna! Koja?

The correct answer is**: Konvolucija signala s Diracovom distribucijom [\dirac(t)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t)) ne mijenja signal**. .

Konvolucija [\bigl(\step( n )\delta( n-1 )\delta( n+4 )+1\bigr) \ast \delta( n+2 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\step(%20n%20)\delta(%20n-1%20)\delta(%20n+4%20)+1\bigr)%20\ast%20\delta(%20n+2%20)) je:

The correct answer is: [1](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=1) .

Konvolucija [\delta( n-3 ) \ast x( n+1 ) \ast \delta( n+2 ) ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-3%20)%20\ast%20x(%20n+1%20)%20\ast%20\delta(%20n+2%20)%20) je:

The correct answer is: [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) .

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{0}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b0%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .

Konvolucija [x( n ) \ast \bigl(\delta( n+3 )+\delta( n-3 )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)%20\ast%20\bigl(\delta(%20n+3%20)+\delta(%20n-3%20)\bigr)) je:

The correct answer is: [x( n-3 )+x( n+3 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n-3%20)+x(%20n+3%20)) .

Samo jedan od navedenih izraza jest definicija periodične (kružne ili cirkularne) konvolucija dva periodična vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20))konačne snage perioda [N](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=N). Koji?

The correct answer is: [x( n )\ccnv{*}y( n )=\sum_{i=0}^{N-1}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)\ccnv%7b*%7dy(%20n%20)=\sum_%7bi=0%7d%5e%7bN-1%7dx(i)y(n-i)) .

Konvolucija [(a t+b) \ast \dirac(c t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(a%20t+b)%20\ast%20\dirac(c%20t-t_0)) ([t_0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t_0), [a](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=a), [b](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=b) i [c](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=c) su realne konstante, [t](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t) je vrijeme) je:

The correct answer is**: Ništa od navedenoga!.**

Promatramo li konvolucije vremenski diskretnih signala koji nemaju konačnu energiju tada svojstvo asocijativnosti konvolucije NE vrijedi!

The correct answer is: **točno**.

Samo jedno od navedenih svojstva jest svojstvo ASOCIJATIVNOSTI konvolucije vremenski kontinuiranih signala konačne energije! Koje? [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)), [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) i [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20))su vremenski diskretni signali dok je [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) realan broj.

The correct answer is: [x( t )*\bigl(y( t )*z( t )\bigr)=\bigl(x( t )*y( t )\bigr)*z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*\bigl(y(%20t%20)*z(%20t%20)\bigr)=\bigl(x(%20t%20)*y(%20t%20)\bigr)*z(%20t%20)) .

Da bi konvolucija [x( t ) \ast y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)%20\ast%20y(%20t%20)) bila jednaka [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) s kašnjenjem od [t_0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t_0) tada [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) mora biti:

The correct answer is: [\dirac(t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t-t_0)) .

Samo jedan od navedenih izraza jest definicija linearne konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije. Koji?

The correct answer is: [x( t )*y( t )=\int_{-\infty}^{+\infty}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b-\infty%7d%5e%7b+\infty%7dx(\tau)y(t-\tau)\,d\tau) .

Neka je vremenski diskretni signal [f( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=f(%20n%20)) jednak konvoluciji signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)), odnosno neka vrijedi [f( n )=x( n ) \ast y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=f(%20n%20)=x(%20n%20)%20\ast%20y(%20n%20)). Čemu je jednak izraz [x( n+1 ) \ast y( n+1 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n+1%20)%20\ast%20y(%20n+1%20))?

The correct answer is: [f( n+2 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=f(%20n+2%20)) .

Odziv vremenski kontinuiranog sustava [S\bigl[u( t )\bigr]=\int_{-\infty}^{t}u( \tau )\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20t%20)\bigr%5d=\int_%7b-\infty%7d%5e%7bt%7du(%20\tau%20)\,d\tau) na Diracovu distribuciju [\dirac( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(%20t%20)) je:

The correct answer is: [h( t )=\step( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20t%20)=\step(%20t%20)) .

Konvolucija vremenski diskretnih signala konačne energije JEST komutativna operacija!

The correct answer is: **točno**.

Linearna konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije je definirana izrazom:

The correct answer is: [x( t )*y( t )=\int_{-\infty}^{+\infty}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b-\infty%7d%5e%7b+\infty%7dx(\tau)y(t-\tau)\,d\tau) .

Samo jedan od navedenih izraza jest definicija linearne konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije. Koji?

The correct answer is: [x( n )*y( n )=\sum_{i=-\infty}^{+\infty}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=-\infty%7d%5e%7b+\infty%7dx(i)y(n-i)) .

Konvolucija vremenski kontinuiranih signala konačne energije NIJE distributivna operacija!

The correct answer is: **netočno**.

Konvolucija [\delta( n-1 ) \ast \bigl(\exp( n ) + \cos( n )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-1%20)%20\ast%20\bigl(\exp(%20n%20)%20+%20\cos(%20n%20)\bigr)) je:

The correct answer is: [\exp( n-1) +\cos( n-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\exp(%20n-1)%20+\cos(%20n-1)) .

Konvolucija [\dirac(t+3) \ast x(t+1) \ast \dirac(3 t-1) ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t+3)%20\ast%20x(t+1)%20\ast%20\dirac(3%20t-1)%20) je:

The correct answer is: **Ništa od navedenoga**!.

Impulsni odziv vremenski kontinuiranog linearn vremenski stalnog sustava je odziv mirnog sustava na:

The correct answer is: **Diracovu distribuciju** [\delta(t)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(t)) .

Konvolucija [(3n+2) \ast \delta( 3n-6 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(3n+2)%20\ast%20\delta(%203n-6%20)) je:

The correct answer is: [3n-4](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=3n-4) .

Profesor tumači da je odziv vremenski diskretnog, vremenski stalnog i mirnog sustava na jedinični skok [\step( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\step(%20n%20)) impulsni odziv sustava. Smatrate da je to:

The correct answer is: **točno**.

Konvolucija [\bigl(\sin( t ) \ast \dirac(t+2)\bigr)\dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\sin(%20t%20)%20\ast%20\dirac(t+2)\bigr)\dirac(t-1)) je:

The correct answer is: [\sin(3) \dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\sin(3)%20\dirac(t-1)) .

Samo jedno od navedenih svojstva jest svojstvo DISTRIBUTIVNOSTI konvolucije vremenski kontinuiranih signala konačne energije! Koje? [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)), [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) i [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20))su vremenski kontinuirani signali dok je [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) realan broj.

The answer is: [x( t )*\bigl(y( t ) + z( t )\bigr)=x( t )*y( t )+x( t )*z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*\bigl(y(%20t%20)%20+%20z(%20t%20)\bigr)=x(%20t%20)*y(%20t%20)+x(%20t%20)*z(%20t%20)) .

Konvolucija [\delta( n-m) \ast \bigl(\exp( n ) + \cos( n )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-m)%20\ast%20\bigl(\exp(%20n%20)%20+%20\cos(%20n%20)\bigr)) je:

The correct answer is: [\exp( n-m )+\cos( n-m )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\exp(%20n-m%20)+\cos(%20n-m%20)) .

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=-\infty}^{n}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=-\infty%7d%5e%7bn%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20n%20)) .

Konvolucija [(3n+2) \ast \delta( 3n-6 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(3n+2)%20\ast%20\delta(%203n-6%20)) je:

The correct answer is: [3n-4](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=3n-4) .

Kako nazivamo odziv mirnog sustava na Diracovu distribuciju [\delta(t)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(t))?

The correct answer is: **impulsni odziv**.

Konvolucija [\dirac(t-2) \ast \bigl(\exp( t ) + \cos( t )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t-2)%20\ast%20\bigl(\exp(%20t%20)%20+%20\cos(%20t%20)\bigr)) je:

The correct answer is: [\exp(t-2)+\cos(t-2)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\exp(t-2)+\cos(t-2)) .

Linearna konvolucija dva vremenski diskretna i KAUZALNA signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je za [n\ge0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=n\ge0) definirana izrazom:

The correct answer is: [x( n )*y( n )=\sum_{i=0}^{n}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=0%7d%5e%7bn%7dx(i)y(n-i)) .

Za koji od navedenih signala [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) vrijedi [x( t ) \ast y( t )=x(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)%20\ast%20y(%20t%20)=x(t+t_0))?

The correct answer is: [\dirac(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t+t_0)) .

Samo jedno od navedenih svojstva iskazuje postojanje NEUTRALNOG ELEMENTA za operaciju konvolucije vremenski diskretnih signala konačne energije! Koje? [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)), [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) i [z( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20n%20)) su vremenski diskretni signali dok je [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) cijeli broj.

The correct answer is: [x( n )*\delta( n )=\delta( n )*x( n )=x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*\delta(%20n%20)=\delta(%20n%20)*x(%20n%20)=x(%20n%20)) .

Linearna konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije je definirana izrazom:

The correct answer is: [x( t )*y( t )=\int_{-\infty}^{+\infty}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b-\infty%7d%5e%7b+\infty%7dx(\tau)y(t-\tau)\,d\tau) .

Konvolucija [x( n ) \ast \bigl(\delta( n+m )+\delta( n-m )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)%20\ast%20\bigl(\delta(%20n+m%20)+\delta(%20n-m%20)\bigr)) je:

The correct answer is: [x( n-m )+x( n+m )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n-m%20)+x(%20n+m%20)) .

Konvolucija [(a t+b) \ast \dirac(c t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(a%20t+b)%20\ast%20\dirac(c%20t-t_0)) ([t_0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t_0), [a](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=a), [b](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=b) i [c](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=c) su realne konstante, [t](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t) je vrijeme) je:

The correct answer is: **Ništa od navedenoga!**.

Konvolucija vremenski kontinuiranih signala konačne energije JEST asocijativna operacija!

The correct answer is: **točno**.

Impulsni odziv vremenski kontinuiranog linearn vremenski stalnog sustava je odziv mirnog sustava na:

The correct answer is: **Diracovu distribuciju** [\delta(t)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(t)) .

Samo jedno od navedenih svojstva iskazuje postojanje NEUTRALNOG ELEMENTA za operaciju konvolucije vremenski diskretnih signala konačne energije! Koje? [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)), [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) i [z( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20n%20)) su vremenski diskretni signali dok je [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) cijeli broj.

The correct answer is: [x( n )*\delta( n )=\delta( n )*x( n )=x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*\delta(%20n%20)=\delta(%20n%20)*x(%20n%20)=x(%20n%20)) .

Periodična (cirkularna ili kruža) konvolucija dva vremenski kontinuirana signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne snage i perioda [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) je definirana izrazom:

The correct answer is: [x( t )\ccnv{*}y( t )=\int_{0}^{T}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)\ccnv%7b*%7dy(%20t%20)=\int_%7b0%7d%5e%7bT%7dx(\tau)y(t-\tau)\,d\tau) .

Konvolucija [\dirac(t+3) \ast x(t+1) \ast \dirac(3 t-1) ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(t+3)%20\ast%20x(t+1)%20\ast%20\dirac(3%20t-1)%20) je:

The correct answer is: [x(t+4-1/3)/3](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(t+4-1/3)/3) .

Periodična (cirkularna ili kruža) konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne snage i perioda [N](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=N) je definirana izrazom:

The correct answer is: [x( n )\ccnv{*}y( n )=\sum_{i=0}^{N-1}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)\ccnv%7b*%7dy(%20n%20)=\sum_%7bi=0%7d%5e%7bN-1%7dx(i)y(n-i)) .

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{+\infty}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b+\infty%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .

Da bi konvolucija [x( n )\ast y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)\ast%20y(%20n%20)) bila jednaka [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) s kašnjenjem od [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) koraka tada [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) mora biti:

The correct answer is: [\delta( n-m )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-m%20)) .

Samo jedno od navedenih svojstva iskazuje postojanje NEUTRALNOG ELEMENTA za operaciju konvolucije vremenski diskretnih signala konačne energije! Koje? [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)), [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) i [z( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20n%20)) su vremenski diskretni signali dok je [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) cijeli broj.

The correct answer is: [x( n )*\delta( n )=\delta( n )*x( n )=x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*\delta(%20n%20)=\delta(%20n%20)*x(%20n%20)=x(%20n%20)) .

Profesor tumači da je odziv vremenski diskretnog, linearnog, vremenski stalnog i mirnog sustava na Kroneckerov niz [\dirac( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(%20n%20)) impulsni odziv sustava. Smatrate da je to:

The correct answer is: **točno**.

Linearna konvolucija dva vremenski kontinuirana i KAUZALNA signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije jest za [t\ge0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t\ge0) definirana izrazom:

The correct answer is: [x( t )*y( t )=\int_{0}^{t}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b0%7d%5e%7bt%7dx(\tau)y(t-\tau)\,d\tau) .

Odziv vremenski kontinuiranog sustava [S\bigl[u( t )\bigr]=\int_{t}^{+\infty}u( \tau )\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20t%20)\bigr%5d=\int_%7bt%7d%5e%7b+\infty%7du(%20\tau%20)\,d\tau) na Diracovu distribuciju [\dirac( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\dirac(%20t%20)) je:

The correct answer is: [h( t )=\step( -t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20t%20)=\step(%20-t%20)) .

Konvolucija [\delta( n-3 ) \ast x( n+1 ) \ast \delta( n+2 ) ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-3%20)%20\ast%20x(%20n+1%20)%20\ast%20\delta(%20n+2%20)%20) je:

The correct answer is: [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) .

Linearna konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije je definirana izrazom:

The correct answer is: [x( n )*y( n )=\sum_{i=-\infty}^{+\infty}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=-\infty%7d%5e%7b+\infty%7dx(i)y(n-i)) .

Konvolucija vremenski kontinuiranih signala konačne energije JEST asocijativna operacija!

The correct answer is: **točno**.

Konvolucija [\bigl(x( t )+y( t ) \ast \dirac(t+2t_0)\bigr) \ast \dirac(t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(x(%20t%20)+y(%20t%20)%20\ast%20\dirac(t+2t_0)\bigr)%20\ast%20\dirac(t-t_0)) je:

The correct answer is: [x(t-t_0)+y(t+t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(t-t_0)+y(t+t_0)) .

Konvolucijom dva vremenski diskretna jedinična skoka [\step( n ) \ast \step( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\step(%20n%20)%20\ast%20\step(%20n%20)) dobivamo:

The correct answer is: [(n+1)\step( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(n+1)\step(%20n%20)) .

Konvolucija [\bigl(\sin( t ) \ast \dirac(t+2)\bigr)\dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\sin(%20t%20)%20\ast%20\dirac(t+2)\bigr)\dirac(t-1)) je:

The correct answer is: [\sin(3) \dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\sin(3)%20\dirac(t-1)) .

Samo jedno od navedenih svojstva jest svojstvo ASOCIJATIVNOSTI konvolucije vremenski kontinuiranih signala konačne energije! Koje? [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)), [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) i [z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20t%20))su vremenski diskretni signali dok je [T](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=T) realan broj.

The correct answer is: [x( t )*\bigl(y( t )*z( t )\bigr)=\bigl(x( t )*y( t )\bigr)*z( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*\bigl(y(%20t%20)*z(%20t%20)\bigr)=\bigl(x(%20t%20)*y(%20t%20)\bigr)*z(%20t%20)) .

Konvolucija [(a t+b) \ast \dirac(c t-t_0)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=(a%20t+b)%20\ast%20\dirac(c%20t-t_0)) ([t_0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t_0), [a](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=a), [b](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=b) i [c](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=c) su realne konstante, [t](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t) je vrijeme) je:

The correct answer is: **Ništa od navedenoga**!.

Samo jedno od navedenih svojstva iskazuje postojanje NEUTRALNOG ELEMENTA za operaciju konvolucije vremenski diskretnih signala konačne energije! Koje? [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)), [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) i [z( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=z(%20n%20)) su vremenski diskretni signali dok je [m](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=m) cijeli broj.

The correct answer is: [x( n )*\delta( n )=\delta( n )*x( n )=x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*\delta(%20n%20)=\delta(%20n%20)*x(%20n%20)=x(%20n%20)) .

Konvolucija [\bigl(x( n )+y( n ) \ast \delta( n+5 )\bigr) \ast \delta( n-2 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(x(%20n%20)+y(%20n%20)%20\ast%20\delta(%20n+5%20)\bigr)%20\ast%20\delta(%20n-2%20)) je:

The correct answer is: [x( n-2 )+y( n+3 )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n-2%20)+y(%20n+3%20)) .

Linearna konvolucija dva vremenski kontinuirana i KAUZALNA signala [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) i [y( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20t%20)) konačne energije jest za [t\ge0](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=t\ge0) definirana izrazom:

The correct answer is: [x( t )*y( t )=\int_{0}^{t}x(\tau)y(t-\tau)\,d\tau](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)*y(%20t%20)=\int_%7b0%7d%5e%7bt%7dx(\tau)y(t-\tau)\,d\tau) .

Samo jedan od navedenih izraza jest definicija linearne konvolucija dva vremenski diskretna signala [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) i [y( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=y(%20n%20)) konačne energije. Koji?

The correct answer is: [x( n )*y( n )=\sum_{i=-\infty}^{+\infty}x(i)y(n-i)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)*y(%20n%20)=\sum_%7bi=-\infty%7d%5e%7b+\infty%7dx(i)y(n-i)) .

Konvolucija [\delta( n-3 ) \ast x( n+1 ) \ast \delta( n+2 ) ](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n-3%20)%20\ast%20x(%20n+1%20)%20\ast%20\delta(%20n+2%20)%20) je:

The correct answer is: [x( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20n%20)) .

Konvolucija [\bigl(\sin( t ) \ast \dirac(t+2)\bigr)\dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\bigl(\sin(%20t%20)%20\ast%20\dirac(t+2)\bigr)\dirac(t-1)) je:

The correct answer is: [\sin(3) \dirac(t-1)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\sin(3)%20\dirac(t-1)) .

Neki složeni vremenski kontinuirani sustav se sastoji od paralenog spoja dvaju linearnih vremenski stalnih sustava čiji impulsni odzivi su [h_1( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h_1(%20t%20)) i [h_2( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h_2(%20t%20)). Ako na ulaz u paralelnog spoja dovedemo signal [x( t )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)) što ćemo dobiti na izlazu?

The correct answer is: [x( t )\ast\bigl(  h_1( t ) + h_2( t )\bigr)](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=x(%20t%20)\ast\bigl(%20%20h_1(%20t%20)%20+%20h_2(%20t%20)\bigr))

Odziv vremenski diskretnog sustava [S\bigl[u( n )\bigr]=\sum_{i=n}^{0}u( i )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=S\bigl%5bu(%20n%20)\bigr%5d=\sum_%7bi=n%7d%5e%7b0%7du(%20i%20)) na Kroneckerov impuls [\delta( n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=\delta(%20n%20)) je:

The correct answer is: [h( n )=\step( -n )](http://moodle.fer.hr/filter/tex/displaytex.php?texexp=h(%20n%20)=\step(%20-n%20)) .