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tugas_4_662023003.m | cobaaa.m

```
213 -    figure(18)
214 -    surf(x, y, z)
215 -    shading interp
216 -    colormap(copper)
217 -    axis equal tight
218 -    title('Plana')
219
220      % Simfoni Gelombang Silang
221 -    [x, y] = meshgrid(linspace(-5,5,300));
222 -    z = sin(x.*y) .* cos(x + y) ./ (1 + 0.1*(x.^2 + y.^2));
223
224 -    figure(19)
225 -    surf(x, y, z)
226 -    shading interp
227 -    axis equal tight
228 -    title('Simfoni Gelombang Silang')
229
230      % Topologi Plasma Terbalik
231 -    [x, y] = meshgrid(linspace(-3,3,300));
232 -    r = sqrt(x.^2 + y.^2);
233 -    z = log(r + 1e-3) .* cos(8*r);
234
235 -    figure(20)
236 -    surf(x, y, z)
237 -    shading interp
238 -    axis equal tight
239 -    title('Topologi Plasma Terbalik')
240
```

script Ln 230 Col 1

Figure 20

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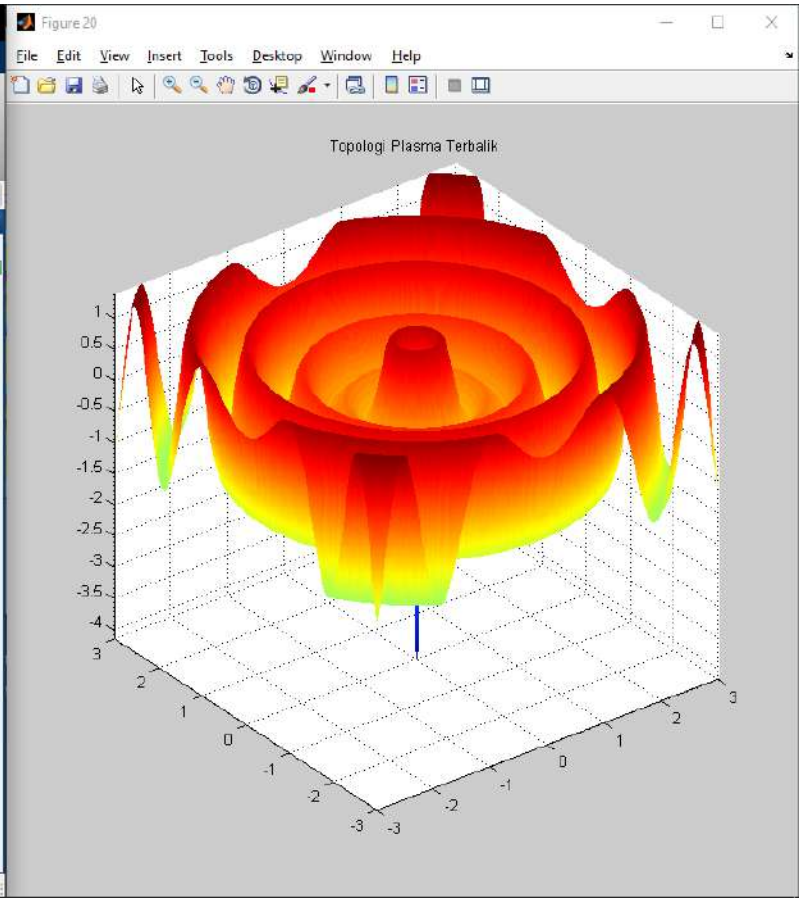

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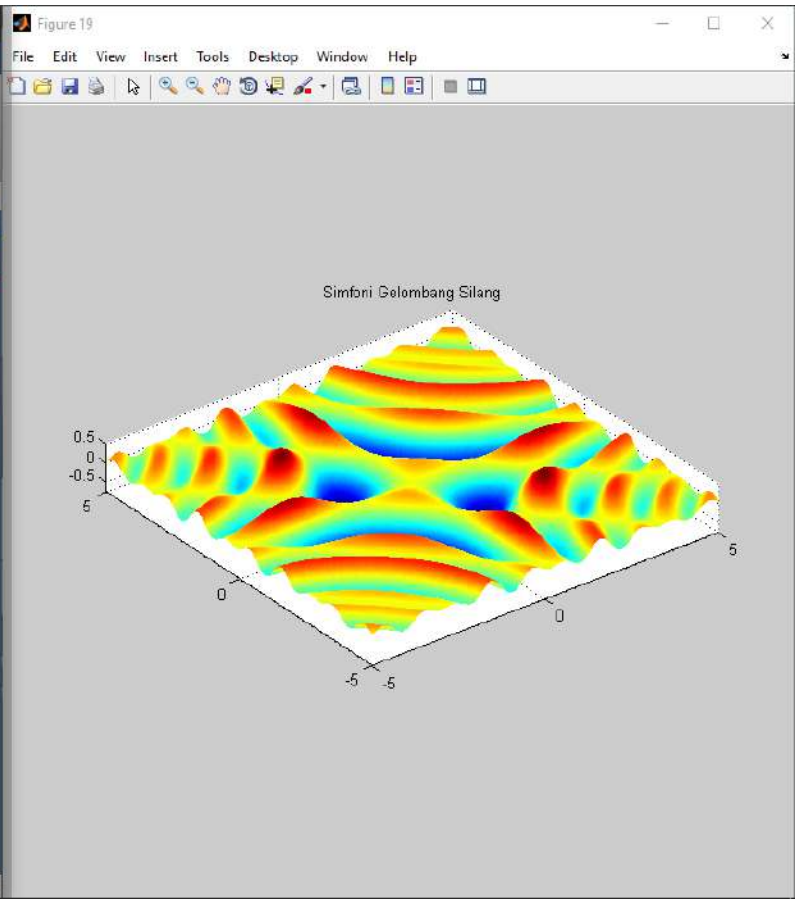
```
figure(18)
surf(x, y, z)
shading interp
colormap(copper)
axis equal tight
title('Plana')

% Simfoni Gelombang Silang
[x, y] = meshgrid(linspace(-5,5,300));
z = sin(x.*y) .* cos(x + y) ./ (1 + 0.1*(x.^2 + y.^2));

figure(19)
surf(x, y, z)
shading interp
axis equal tight
title('Simfoni Gelombang Silang')

% Topologi Plasma Terbalik
[x, y] = meshgrid(linspace(-3,3,300));
r = sqrt(x.^2 + y.^2);
z = log(r + 1e-3) .* cos(8*r);

figure(20)
surf(x, y, z)
shading interp
axis equal tight
title('Topologi Plasma Terbalik')
```



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```
200 -   y = sin(v) .* cos(u);
201 -   z = sin(5*(x.^2 + y.^2)) ./ sqrt(x.^2 + y.^2 + 0.01);
202
203 -   figure(17)
204 -   surf(x, y, z)
205 -   shading interp
206 -   axis equal
207 -   title('Pusaran Abstrak')
208
209     % Plana
210 -   [x, y] = meshgrid(linspace(-1.5, 1.5, 250));
211 -   z = x.^4 - y.^4;
212
213 -   figure(18)
214 -   surf(x, y, z)
215 -   shading interp
216 -   colormap(copper)
217 -   axis equal tight
218 -   title('Plana')
219
220     % Simfoni Gelombang Silang
221 -   [x, y] = meshgrid(linspace(-5,5,300));
222 -   z = sin(x.*y) .* cos(x + y) ./ (1 + 0.1*(x.^2 + y.^2));
223
224 -   figure(19)
225 -   surf(x, y, z)
226 -   shading interp
227 -   axis equal tight
```

script Ln 209 Col 1

Figure 18

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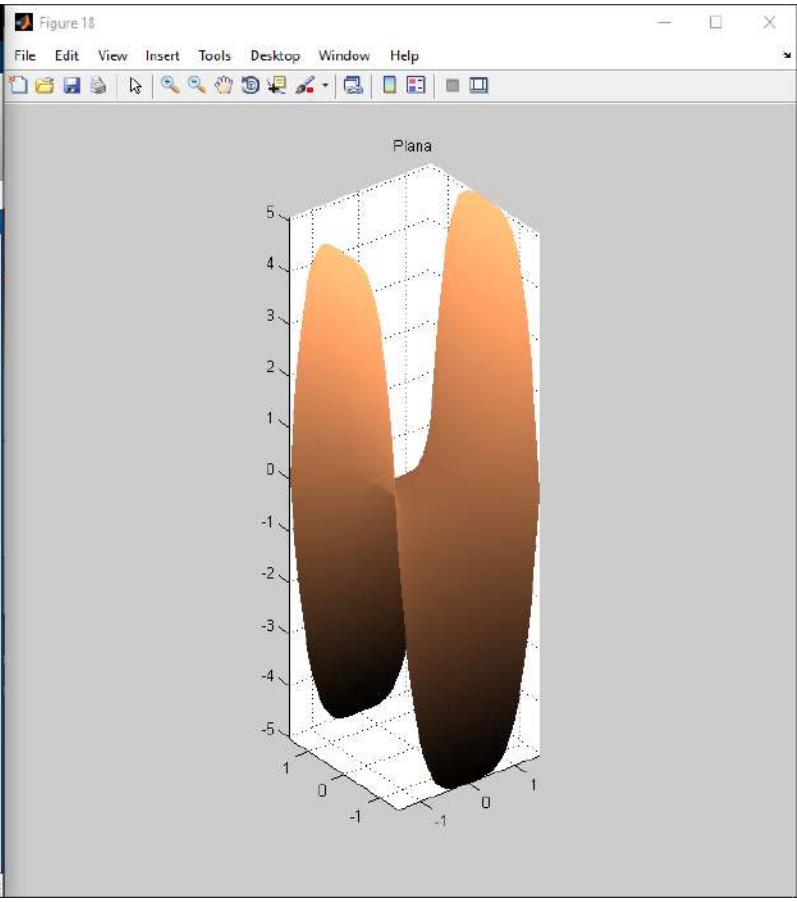

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tugas_4_662023003.m | cobaaa.m

```
186
187 -   [x, y] = meshgrid(linspace(-2,2,400));
188 -   z = sin(10*(x.^2 - y.^2)) ./ (1 + x.^2 + y.^2);
189
190 -   figure(16)
191 -   surf(x, y, z)
192 -   shading interp
193 -   colormap(cool)
194 -   axis equal tight
195 -   title('Pola Fraktal')
196
197     % Pusaran Abstrak
198 -   [u, v] = meshgrid(linspace(-pi, pi, 300), linspace(-pi, pi, 300));
199 -   x = sin(u) .* cos(v);
200 -   y = sin(v) .* cos(u);
201 -   z = sin(5*(x.^2 + y.^2)) ./ sqrt(x.^2 + y.^2 + 0.01);
202
203 -   figure(17)
204 -   surf(x, y, z)
205 -   shading interp
206 -   axis equal
207 -   title('Pusaran Abstrak')
208
209     % Plana
210 -   [x, y] = meshgrid(linspace(-1.5, 1.5, 250));
211 -   z = x.^4 - y.^4;
212
213 -   figure(18)
```

script Ln 197 Col 1

Figure 17

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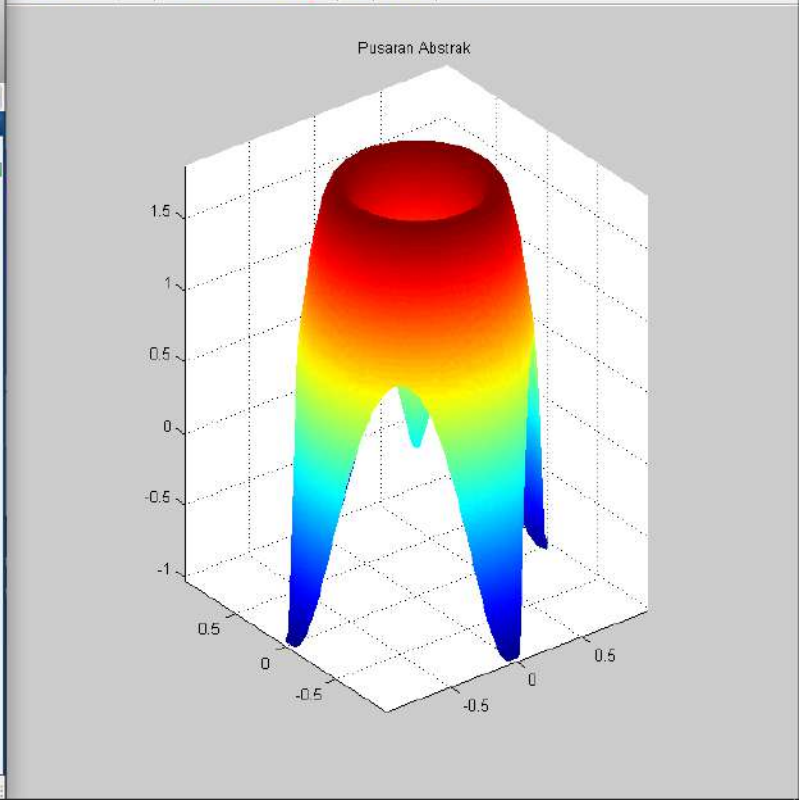

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tugas_4_662023003.m | cobaaa.m

```
175 -    y = r .* sin(phi) .* sin(theta);
176 -    z = r .* cos(phi);
177
178 -    figure(15)
179 -    surf(x, y, z)
180 -    shading interp
181 -    colormap(hot)
182 -    axis equal
183 -    title('Bunga 3D Berdenyut')
184
185      % Pola Fraktal
186
187 -    [x, y] = meshgrid(linspace(-2,2,400));
188 -    z = sin(10*(x.^2 - y.^2)) ./ (1 + x.^2 + y.^2);
189
190 -    figure(16)
191 -    surf(x, y, z)
192 -    shading interp
193 -    colormap(cool)
194 -    axis equal tight
195 -    title('Pola Fraktal')
196
197      % Pusaran Abstrak
198 -    [u, v] = meshgrid(linspace(-pi, pi, 300), linspace(-pi, pi, 300));
199 -    x = sin(u) .* cos(v);
200 -    y = sin(v) .* cos(u);
201 -    z = sin(5*(x.^2 + y.^2)) ./ sqrt(x.^2 + y.^2 + 0.01);
202
```

script Ln 185 Col 1

Figure 16

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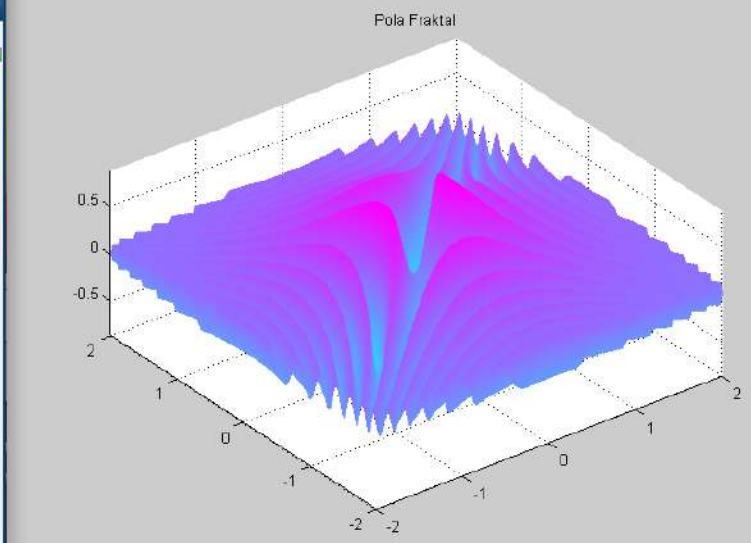

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tugas_4_662023003.m | cobaaa.m

```
165 -   figure(14)
166 -   surf(x, y, z)
167 -   shading interp
168 -   axis equal off
169 -   title('Gelombang Torus Terkelupas')
170
171     % Bunga 3D Berdenyut
172 -   [phi, theta] = meshgrid(linspace(0, pi, 150), linspace(0, 2*pi, 150));
173 -   r = 1 + 0.5*sin(6*phi).*cos(8*theta);
174 -   x = r .* sin(phi) .* cos(theta);
175 -   y = r .* sin(phi) .* sin(theta);
176 -   z = r .* cos(phi);
177
178 -   figure(15)
179 -   surf(x, y, z)
180 -   shading interp
181 -   colormap(hot)
182 -   axis equal
183 -   title('Bunga 3D Berdenyut')
184
185     % Pola Frakta
186
187 -   [x, y] = meshgrid(linspace(-2,2,400));
188 -   z = sin(10*(x.^2 - y.^2)) ./ (1 + x.^2 + y.^2);
189
190 -   figure(16)
191 -   surf(x, y, z)
192 -   shading interp
```

script Ln 171 Col 1

Figure 15

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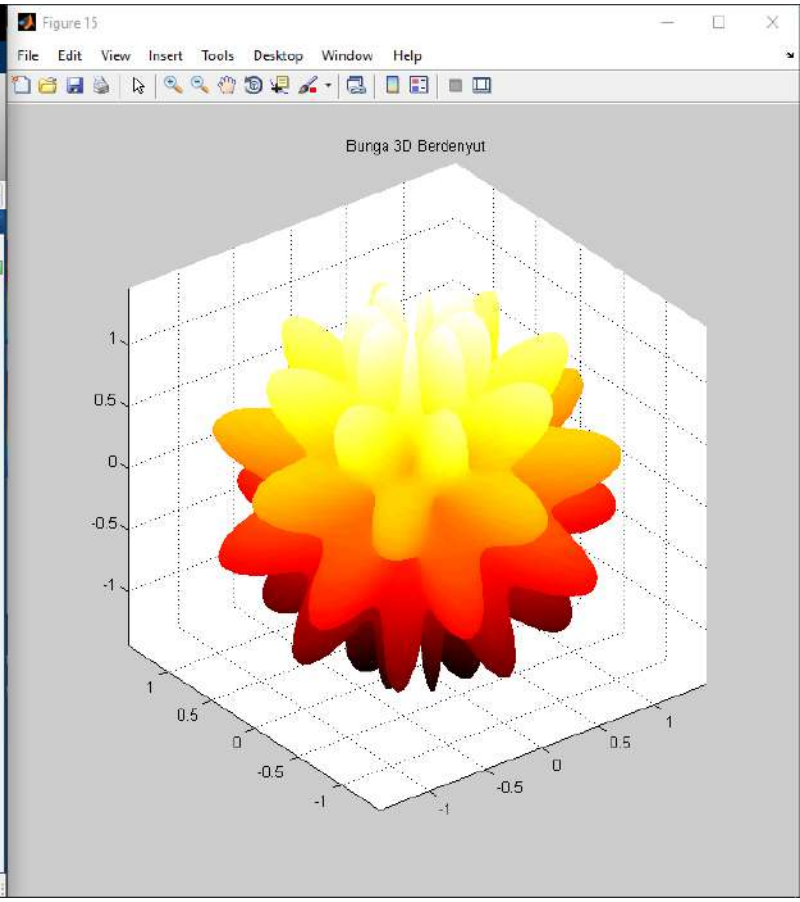

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tugas_4_662023003.m | cobaaa.m

```
148 -   y = r .* sin(theta);
149 -   z = sin(4*theta) ./ r;
150
151 -   figure(13)
152 -   surf(x, y, z)
153 -   shading interp
154 -   title('Spiral Gelombang Pusaran')
155 -   axis equal tight
156
157     % Gelombang Torus Terkelupas
158
159 -   [u, v] = meshgrid(linspace(0, 2*pi, 200), linspace(0, 2*pi, 200));
160 -   R = 3; r = 1 + 0.3*sin(5*v + 3*u);
161 -   x = (R + r.*cos(v)) .* cos(u);
162 -   y = (R + r.*cos(v)) .* sin(u);
163 -   z = r .* sin(v);
164
165 -   figure(14)
166 -   surf(x, y, z)
167 -   shading interp
168 -   axis equal
169 -   title('Gelombang Torus Terkelupas')
170
171     % Bunga 3D Berdenyut
172 -   [phi, theta] = meshgrid(linspace(0, pi, 150), linspace(0, 2*pi, 150));
173 -   r = 1 + 0.5*sin(6*phi).*cos(8*theta);
174 -   x = r .* sin(phi) .* cos(theta);
175 -   y = r .* sin(phi) .* sin(theta);
```

script Ln 157 Col 1

Figure 14

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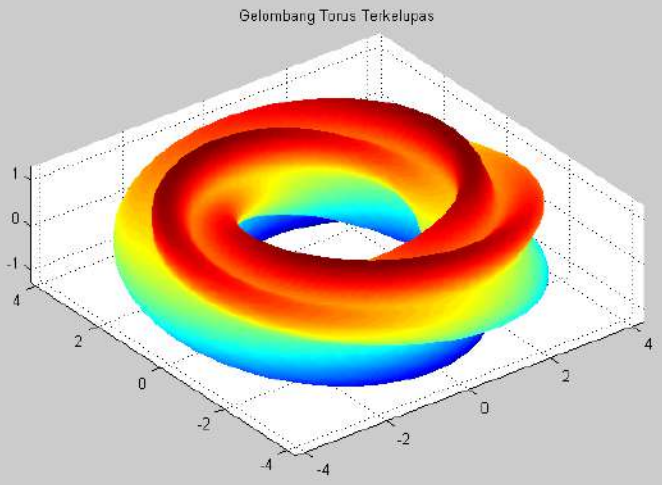

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```
136
137 -   figure(12)
138 -   plot(x,y,'m','LineWidth',2)
139 -   axis equal
140 -   title('Kurva Butterfly (Kupu-kupu)')
141 -   grid on
142
143     % Spiral Gelombang Pusaran
144 -   theta = linspace(0, 6*pi, 300);
145 -   r = linspace(0.1, 5, 300);
146 -   [theta, r] = meshgrid(theta, r);
147 -   x = r .* cos(theta);
148 -   y = r .* sin(theta);
149 -   z = sin(4*theta) ./ r;
150
151 -   figure(13)
152 -   surf(x, y, z)
153 -   shading interp
154 -   title('Spiral Gelombang Pusaran')
155 -   axis equal tight
156
157     % Gelombang Torus Terkelupas
158
159 -   [u, v] = meshgrid(linspace(0, 2*pi, 200), linspace(0, 2*pi, 200));
160 -   R = 3; r = 1 + 0.3*sin(5*v + 3*u);
161 -   x = (R + r.*cos(v)) .* cos(u);
162 -   y = (R + r.*cos(v)) .* sin(u);
163 -   z = r .* sin(v);
```

script Ln 143 Col 1

Figure 13

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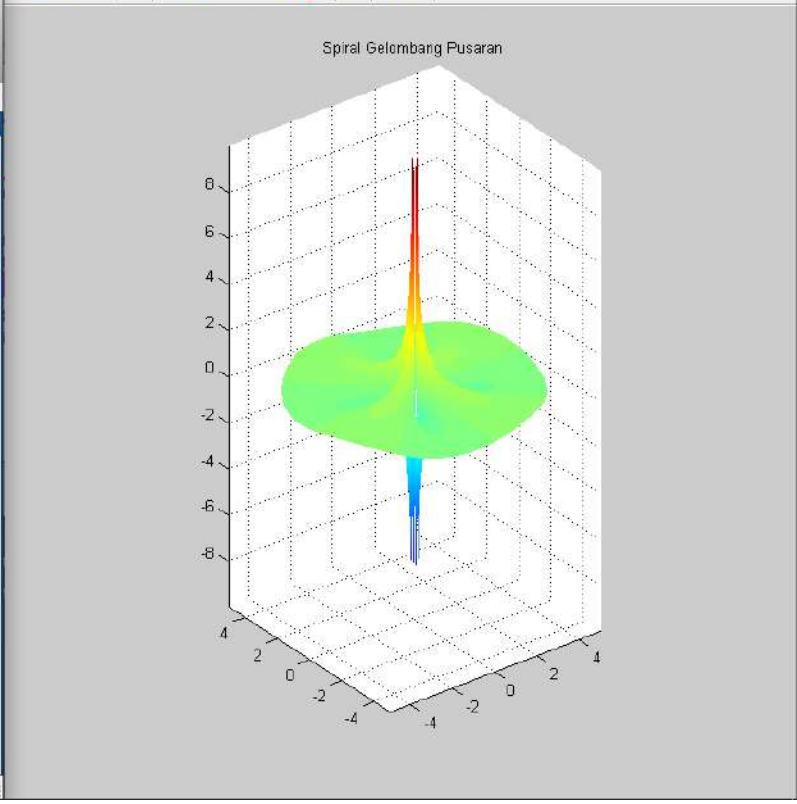

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```
120     % Cincin Tak Beraturan
121 -   theta = linspace(0,2*pi,500);
122 -   r = 1 + 0.3*rand(1,500); % radius acak kecil
123
124 -   x = r .* cos(theta);
125 -   y = r .* sin(theta);
126
127 -   figure(11)
128 -   plot(x,y,'r','LineWidth',2)
129 -   axis equal
130 -   title('Cincin Tak Beraturan')
131
132     % Kurva Butterfly
133 -   t = linspace(0,12*pi,1000);
134 -   x = sin(t) .* (exp(cos(t)) - 2*cos(4*t) - sin(t/12).^5);
135 -   y = cos(t) .* (exp(cos(t)) - 2*cos(4*t) - sin(t/12).^5);
136
137 -   figure(12)
138 -   plot(x,y,'m','LineWidth',2)
139 -   axis equal
140 -   title('Kurva Butterfly (Kupu-kupu)')
141 -   grid on
142
143     % Spiral Gelombang Pusaran
144 -   theta = linspace(0, 6*pi, 300);
145 -   r = linspace(0.1, 5, 300);
146 -   [theta, r] = meshgrid(theta, r);
147 -   x = r .* cos(theta);
```

script Ln 127 Col 1

Figure 12

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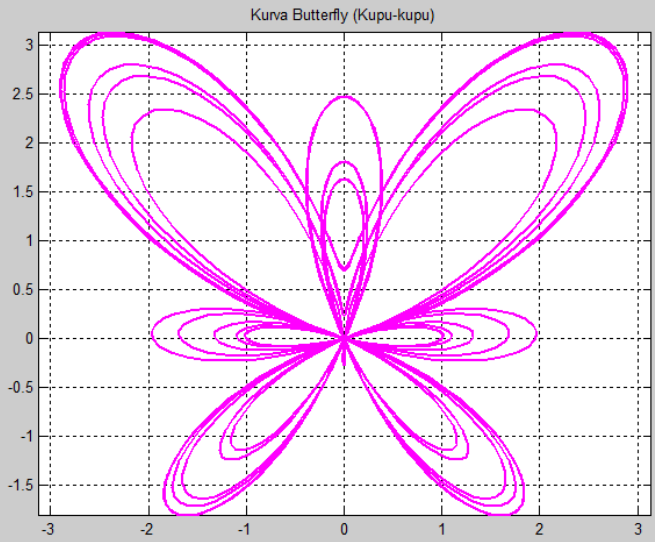

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tugas_4_662023003.m | cobaaa.m

```
109 -   theta = linspace(0,2*pi,n+1);
110 -   r = linspace(0,1,n);
111
112 -   figure(10)
113 -   hold on
114 -   for i=1:n
115 -       plot([0 r(i)*cos(theta(i))],[0 r(i)*sin(theta(i))],'b','LineWidth',
116 -   end
117 -   axis equal
118 -   title('Poligon Starburst')
119
120     % Cincin Tak Beraturan
121 -   theta = linspace(0,2*pi,500);
122 -   r = 1 + 0.3*rand(1,500); % radius acak kecil
123
124 -   x = r .* cos(theta);
125 -   y = r .* sin(theta);
126
127 -   figure(11)
128 -   plot(x,y,'r','LineWidth',2)
129 -   axis equal
130 -   title('Cincin Tak Beraturan')
131
132     % Kurva Butterfly
133 -   t = linspace(0,12*pi,1000);
134 -   x = sin(t) .* (exp(cos(t)) - 2*cos(4*t) - sin(t/12).^5);
135 -   y = cos(t) .* (exp(cos(t)) - 2*cos(4*t) - sin(t/12).^5);
136
```

script Ln 112 Col 1

Figure 11

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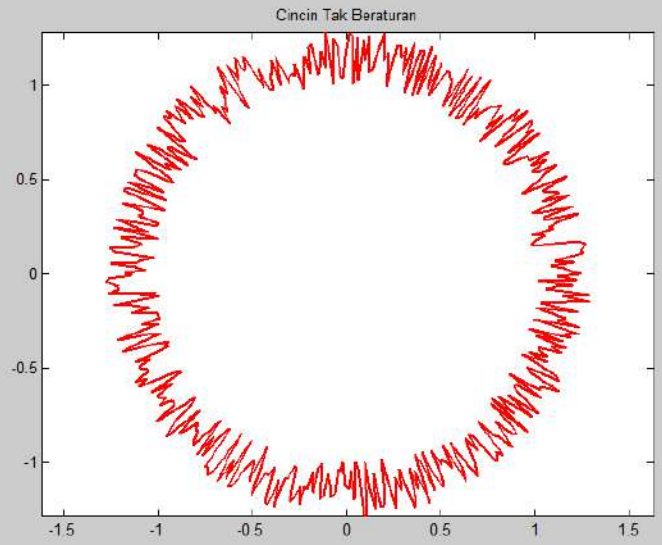

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tugas_4_662023003.m | cobaaa.m

```
97
98    % Gelombang Chaotic
99 -  x = linspace(-5,5,1000);
100 -  y = sin(x.^2) .* cos(3*x) + 0.5*sin(10*x);
101
102 -  figure(9)
103 -  plot(x,y,'m','LineWidth',1.8)
104 -  grid on
105 -  title('Gelombang Chaotic')
106
107    % Poligon Starburst
108 -  n = 30; % jumlah garis
109 -  theta = linspace(0,2*pi,n+1);
110 -  r = linspace(0,1,n);
111
112 -  figure(10)
113 -  hold on
114 -  for i=1:n
115 -      plot([0 r(i)*cos(theta(i))],[0 r(i)*sin(theta(i))],'b','LineWidth',
116 -  end
117 -  axis equal
118 -  title('Poligon Starburst')
119
120    % Cincin Tak Beraturan
121 -  theta = linspace(0,2*pi,500);
122 -  r = 1 + 0.3*rand(1,500); % radius acak kecil
123
124 -  x = r .* cos(theta);
```

script Ln 107 Col 1

Figure 10

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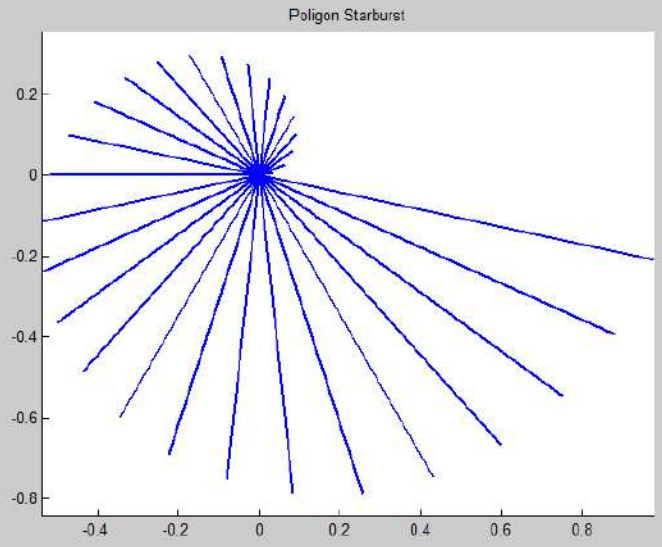

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tugas_4_662023003.m | cobaaa.m

```
84 -    axis equal
85
86      % Kurva Lissajous
87 -    t = linspace(0,2*pi,1000);
88 -    a = 5; b = 4; delta = pi/3;
89
90 -    x = sin(a*t + delta);
91 -    y = sin(b*t);
92
93 -    figure(8)
94 -    plot(x,y,'r','LineWidth',2)
95 -    axis equal
96 -    title('Kurva Lissajous')
97
98      % Gelombang Chaotic
99 -    x = linspace(-5,5,1000);
100 -   y = sin(x.^2) .* cos(3*x) + 0.5*sin(10*x);
101
102 -   figure(9)
103 -   plot(x,y,'m','LineWidth',1.8)
104 -   grid on
105 -   title('Gelombang Chaotic')
106
107     % Poligon Starburst
108 -   n = 30; % jumlah garis
109 -   theta = linspace(0,2*pi,n+1);
110 -   r = linspace(0,1,n);
111
```

script Ln 98 Col 1

Figure 9

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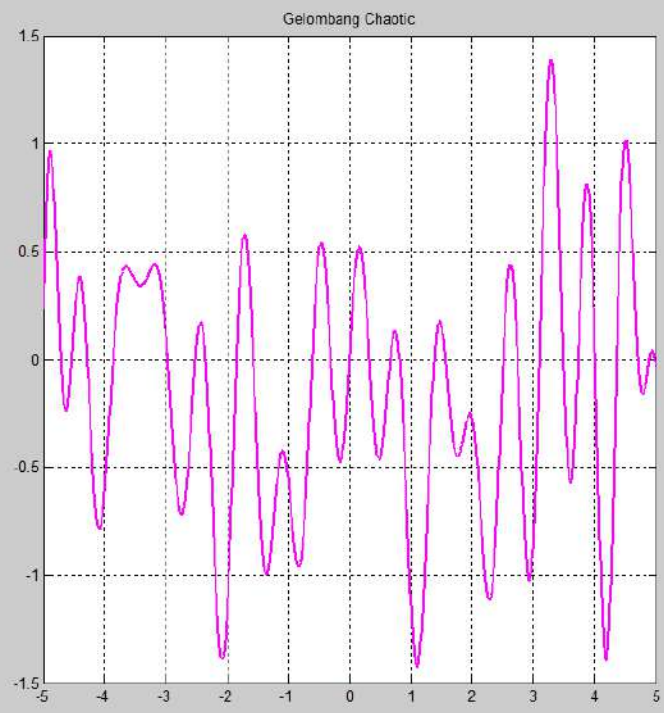

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tugas_4_662023003.m | cobaaa.m

```
73 -    a = 0.1;
74 -    r = exp(a*theta);
75 -    x = r .* cos(theta);
76 -    y = r .* sin(theta);
77
78 -    c = linspace(1,10,length(theta));
79 -    figure (7)
80 -    scatter(x,y,5,c,'filled')
81 -    colormap(jet)
82 -    colorbar
83 -    title('Spiral Logaritmik Berwarna')
84 -    axis equal
85
86      % Kurva Lissajous
87 -    t = linspace(0,2*pi,1000);
88 -    a = 5; b = 4; delta = pi/3;
89
90 -    x = sin(a*t + delta);
91 -    y = sin(b*t);
92
93 -    figure(8)
94 -    plot(x,y,'r','LineWidth',2)
95 -    axis equal
96 -    title('Kurva Lissajous')
97
98      % Gelombang Chaotic
99 -    x = linspace(-5,5,1000);
100 -   y = sin(x.^2) .* cos(3*x) + 0.5*sin(10*x);
```

script Ln 86 Col 1

Figure 8

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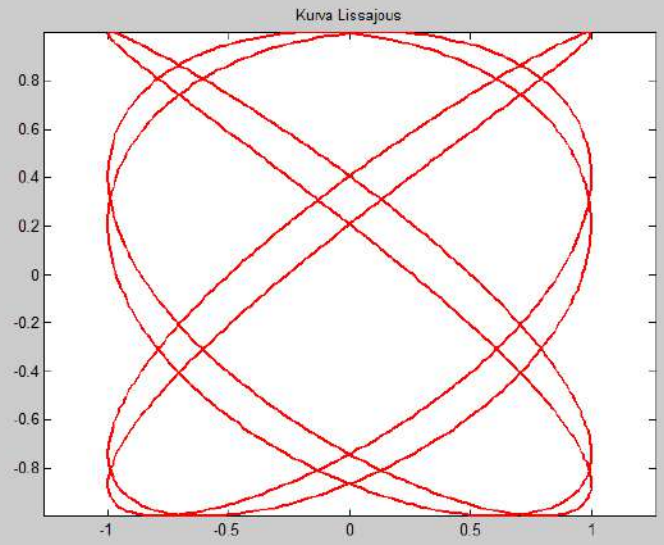

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tugas_4_662023003.m | cobaaa.m

```
66 -    shading interp
67 -    colormap(hot)
68 -    title('Bunga 3D Berpola Fraktal')
69 -    axis equal
70
71      % Spiral Logaritmik Berwarna
72 -    theta = linspace(0,6*pi,1000);
73 -    a = 0.1;
74 -    r = exp(a*theta);
75 -    x = r .* cos(theta);
76 -    y = r .* sin(theta);
77
78 -    c = linspace(1,10,length(theta));
79 -    figure (7)
80 -    scatter(x,y,5,c,'filled')
81 -    colormap(jet)
82 -    colorbar
83 -    title('Spiral Logaritmik Berwarna')
84 -    axis equal
85
86      % Kurva Lissajous
87 -    t = linspace(0,2*pi,1000);
88 -    a = 5; b = 4; delta = pi/3;
89
90 -    x = sin(a*t + delta);
91 -    y = sin(b*t);
92
93 -    figure(8)
```

script Ln 71 Col 1

Figure 7

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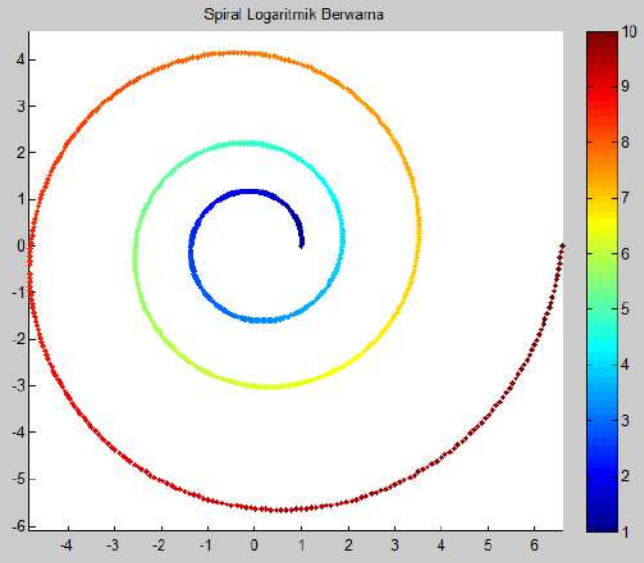

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tugas_4_662023003.m | cobaaa.m

```
52 -    figure(5)
53 -    surf(x,y,z)
54 -    shading interp
55 -    title('Bola Beralur')
56 -    axis equal
57
58      % Bunga 3D Berpola Fraktal
59 -    [x,y] = meshgrid(linspace(-4,4,200));
60 -    r = sqrt(x.^2 + y.^2);
61 -    theta = atan2(y,x);
62 -    z = sin(5*r) .* cos(7*theta) .* exp(-0.3*r);
63
64 -    figure(6)
65 -    surf(x,y,z)
66 -    shading interp
67 -    colormap(hot)
68 -    title('Bunga 3D Berpola Fraktal')
69 -    axis equal
70
71      % Spiral Logaritmik Berwarna
72 -    theta = linspace(0,6*pi,1000);
73 -    a = 0.1;
74 -    r = exp(a*theta);
75 -    x = r .* cos(theta);
76 -    y = r .* sin(theta);
77
78 -    c = linspace(1,10,length(theta));
79 -    figure (7)
```

script Ln 58 Col 1

Figure 6

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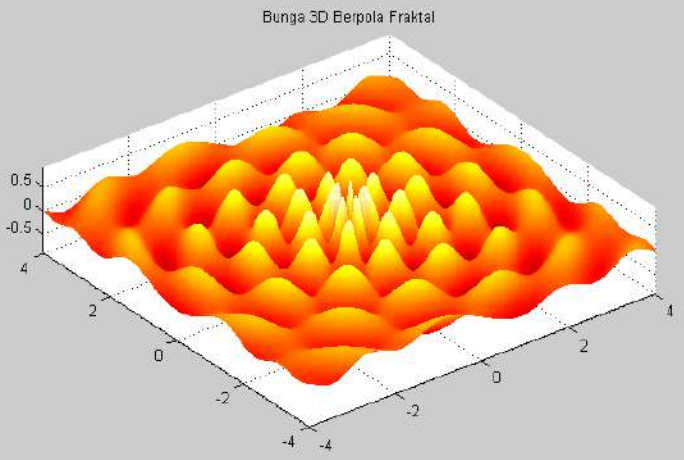

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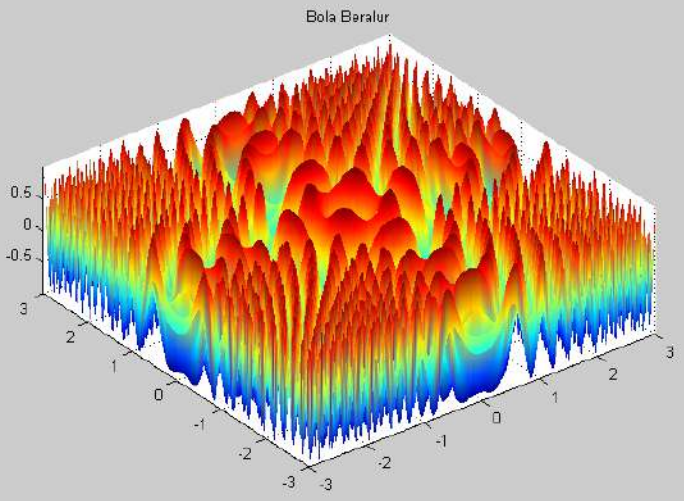
tugas_4_662023003.m | cobaaa.m

```
36 -    axis tight
37
38      % Gelombang Jaring Jaring
39 -    [x,y] = meshgrid(linspace(-5,5,200));
40 -    z = sin(x.*y) .* cos(x - y);
41
42 -    figure(4)
43 -    surf(x,y,z)
44 -    shading interp
45 -    title('Gelombang Jaring Jaring')
46 -    axis tight
47
48      % Bola Beralur
49 -    [x,y] = meshgrid(linspace(-3,3,180));
50 -    z = sin(5*(x.^2 + y.^2)) .* cos(3*(x.^2 - y.^2));
51
52 -    figure(5)
53 -    surf(x,y,z)
54 -    shading interp
55 -    title('Bola Beralur')
56 -    axis equal
57
58      % Bunga 3D Berpola Fraktal
59 -    [x,y] = meshgrid(linspace(-4,4,200));
60 -    r = sqrt(x.^2 + y.^2);
61 -    theta = atan2(y,x);
62 -    z = sin(5*r) .* cos(7*theta) .* exp(-0.3*r);
63
```

script Ln 48 Col 1

Figure 5

File Edit View Insert Tools Desktop Window Help



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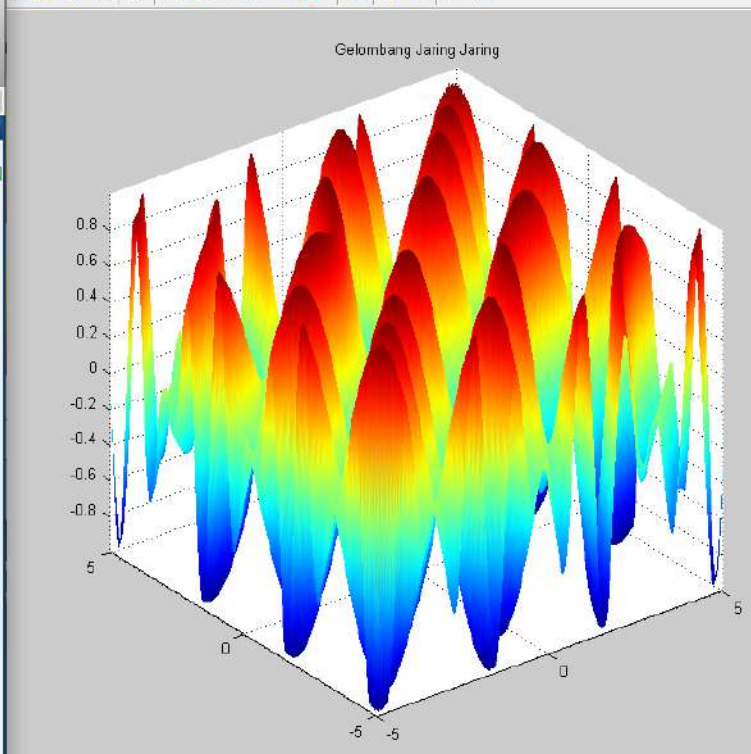
tugas_4_662023003.m | cobaaa.m

```
32 -    surf(x,y,z)
33 -    shading interp
34 -    colormap(hot)
35 -    title('Kubus Melengkung')
36 -    axis tight
37
38      % Gelombang Jaring Jaring
39 -    [x,y] = meshgrid(linspace(-5,5,200));
40 -    z = sin(x.*y) .* cos(x - y);
41
42 -    figure(4)
43 -    surf(x,y,z)
44 -    shading interp
45 -    title('Gelombang Jaring Jaring')
46 -    axis tight
47
48      % Bola Beralur
49 -    [x,y] = meshgrid(linspace(-3,3,180));
50 -    z = sin(5*(x.^2 + y.^2)) .* cos(3*(x.^2 - y.^2));
51
52 -    figure(5)
53 -    surf(x,y,z)
54 -    shading interp
55 -    title('Bola Beralur')
56 -    axis equal
57
58      % Bunga 3D Berpola Fraktal
59 -    [x,y] = meshgrid(linspace(-4,4,200));
```

script Ln 37 Col 1

Figure 4

File Edit View Insert Tools Desktop Window Help



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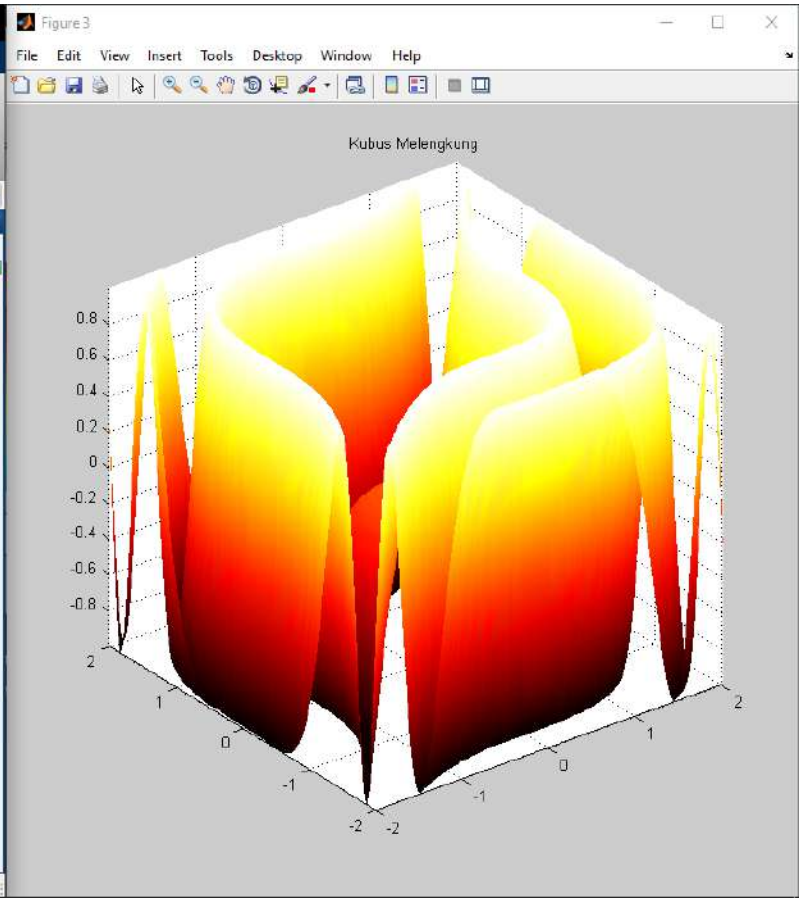
tugas_4_662023003.m | cobaaa.m

```
    figure(2)
    surf(x,y,z)
    shading interp
    title('Gelombang Bunga')
    axis tight

    % Kubus Melengkung
    [x,y] = meshgrid(linspace(-2,2,150));
    z = sin(x.^3 - y.^3);

    figure(3)
    surf(x,y,z)
    shading interp
    colormap(hot)
    title('Kubus Melengkung')
    axis tight

    % Gelombang Jaring Jaring
    [x,y] = meshgrid(linspace(-5,5,200));
    z = sin(x.*y) .* cos(x - y);

    figure(4)
    surf(x,y,z)
    shading interp
    title('Gelombang Jaring Jaring')
    axis tight
```

script Ln 27 Col 1

Figure 3

File Edit View Insert Tools Desktop Window Help



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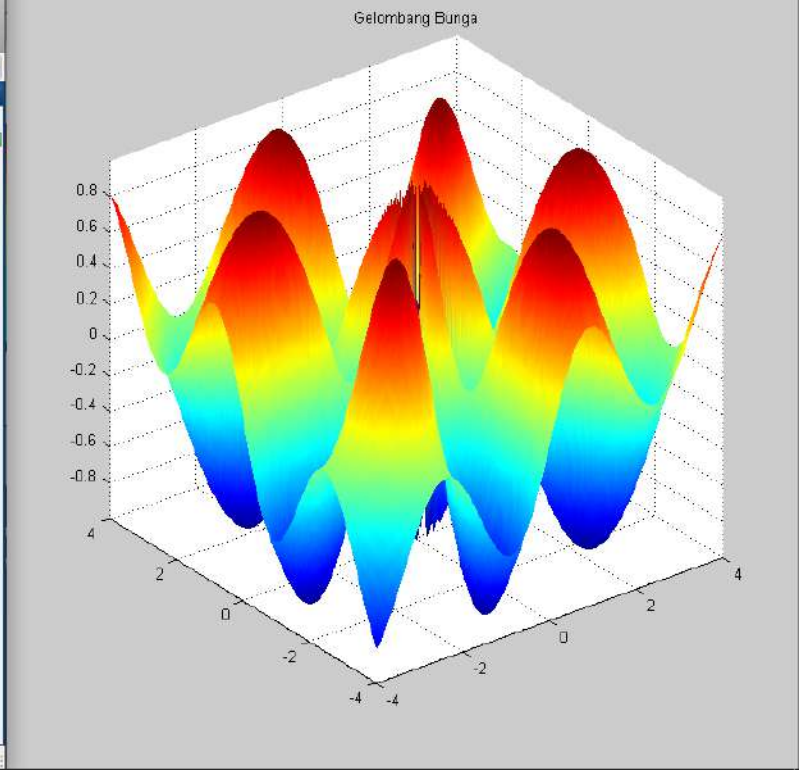
```
11 -    shading interp
12 -    title('Ripple Menyebar')
13 -    axis tight
14
15      % Gelombang Bunga
16 -    [x,y] = meshgrid(linspace(-4,4,200));
17 -    r = sqrt(x.^2 + y.^2);
18 -    theta = atan2(y,x);
19 -    z = sin(6*theta) .* cos(r);
20
21 -    figure(2)
22 -    surf(x,y,z)
23 -    shading interp
24 -    title('Gelombang Bunga')
25 -    axis tight
26
27      % Kubus Melengkung
28 -    [x,y] = meshgrid(linspace(-2,2,150));
29 -    z = sin(x.^3 - y.^3);
30
31 -    figure(3)
32 -    surf(x,y,z)
33 -    shading interp
34 -    colormap(hot)
35 -    title('Kubus Melengkung')
36 -    axis tight
37
38      % Gelombang Jaring Jaring
```

script Ln 15 Col 1

Figure 2

File Edit View Insert Tools Desktop Window Help



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tugas_4_662023003.m | cobaaa.m

```
1 -  clc
2 -  clear
3
4    % Ripple Menyebar
5 -  [x,y] = meshgrid(linspace(-6,6,150));
6 -  r = sqrt(x.^2 + y.^2);
7 -  z = sin(5*r) ./ (1 + r.^2);
8
9 -  figure(1)
10 - surf(x,y,z)
11 - shading interp
12 - title('Ripple Menyebar')
13 - axis tight
14
15   % Gelombang Bunga
16 - [x,y] = meshgrid(linspace(-4,4,200));
17 - r = sqrt(x.^2 + y.^2);
18 - theta = atan2(y,x);
19 - z = sin(6*theta) .* cos(r);
20
21 - figure(2)
22 - surf(x,y,z)
23 - shading interp
24 - title('Gelombang Bunga')
25 - axis tight
26
27   % Kubus Melengkung
28 - [x,y] = meshgrid(linspace(-2,2,150));
```

script Ln 5 Col 1

Figure 1

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