Wydruk programu ,,Profil_wsp” do wytworzenia rysunków profili współczynnika załamania prezentowanych układów

```
Exit[]
```

Rysunek 7.3

```
w = 6;
An = 1;
ξ = 8 / 10;
Ay = 1;
Ax = Ay √(1 - ξ^2) ;
P = 0.5;
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ( 2 An / (2 + (Ay+x)^2/Ax^2 + y^2/Ay^2) + 2 An / (2 + (x-Ay)^2/Ax^2 + y^2/Ay^2) + 4 Sin[y]^12 );
nn[x_, y_] = n1 + (-1 + n1) τ (λ^2 - λ1^2) λ2^2 / (λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 29, PlotPoints → 39];
gWsp = Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
```

Rysunek 7.4

```
w = 6;
An = 1;
ξ = 8 / 10;
Ay = 1;
Ax = Ay √(1 - ξ^2) ;
P = 0.9;
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ( 2 An / (2 + (Ay+x)^2/Ax^2 + y^2/Ay^2) + 2 An / (2 + (x-Ay)^2/Ax^2 + y^2/Ay^2) + 4 Sin[y]^12 );
nn[x_, y_] = n1 + (-1 + n1) τ (λ^2 - λ1^2) λ2^2 / (λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 29, PlotPoints → 39];
gWsp1 = Plot[nn[x, 0], {x, -w, w}, PlotStyle → Red, PlotRange → {All, {0, 3}}]
τ = 0.5;
n1 = 1 + P ( 2 An / (2 + (Ay+x)^2/Ax^2 + y^2/Ay^2) + 2 An / (2 + (x-Ay)^2/Ax^2 + y^2/Ay^2) + 4 Sin[y]^12 );
nn[x_, y_] = n1 + (-1 + n1) τ (λ^2 - λ1^2) λ2^2 / (λ^2 (λ1^2 - λ2^2));
gWsp2 =
 Plot[nn[x, 0], {x, -w, w}, PlotStyle → Green, PlotRange → {All, {0, 3}}]
τ = 0.8;
n1 = 1 + P ( 2 An / (2 + (Ay+x)^2/Ax^2 + y^2/Ay^2) + 2 An / (2 + (x-Ay)^2/Ax^2 + y^2/Ay^2) + 4 Sin[y]^12 );
nn[x_, y_] = n1 + (-1 + n1) τ (λ^2 - λ1^2) λ2^2 / (λ^2 (λ1^2 - λ2^2));
gWsp3 = Plot[nn[x, 0], {x, -w, w}, PlotStyle → Blue, PlotRange → {All, {0, 3}}]
Show[{gWsp1, gWsp2, gWsp3}]
```

Rysunek 7.9

```
w = 6;
v = 0.5;
a = 1;
b = 0.9;
ro = 1;
P = 0.9;
u = Sqrt[(x/a)^2 + (y/b)^2];
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ((1 + Exp[-ro / v])/(1 + Exp[u - ro / v]));
nn[x_, y_] = n1 + ((-1 + n1) τ (λ^2 - λ1^2) λ2^2)/(λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 29, PlotPoints → 39];
gWsp = Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
```

Rysunek 7.12

```
w = 6;
v = 0.2;
a = 1;
b = 0.9;
ro = 0.9;
P = 0.35;
u = Sqrt[(x/a)^2 + (y/b)^2];
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ((1 + Exp[-ro / v])/(1 + Exp[u - ro / v]) + (x - 1)/(1 + Exp[u - ro / v]));
nn[x_, y_] = n1 + ((-1 + n1) τ (λ^2 - λ1^2) λ2^2)/(λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 29, PlotPoints → 39];
gWsp = Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
```

Rysunek 7.17

```
w = 8;
v = 0.5;
a = 1;
b = 3;
ro = 1;
P = 0.9;
u = Sqrt[((x - y)/a)^2 + ((x + y)/b)^2];
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ((1 + Exp[-ro / v])/(1 + Exp[u - ro / v]));
nn[x_, y_] = n1 + ((-1 + n1) τ (λ^2 - λ1^2) λ2^2)/(λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 29, PlotPoints → 39];
gWsp = Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
```

Rysunek 7.19

```
w = 6;
k = 3;
ro = 2;
aa = ro / 3;
P = 1;
Clear[f];
f[x_] = If[-1 < x < 1, (1 - (x^2)^k)^(2 k), 0];
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P f[(Sqrt[x^2 + y^2] - ro)/aa];
nn[x_, y_] = n1 + ((-1 + n1) ϵ (λ^2 - λ1^2) λ2^2)/(λ^2 (λ1^2 - λ2^2));
gWsp = Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
tlo = ContourPlot[nn[x, y], {x, -ro - 2 aa, ro + 2 aa},
   {y, -ro - 2 aa, ro + 2 aa}, Contours → 20, PlotPoints → 39];
```

Rysunek 7.22

```
w = 9;
An = 1;
ξ = 8 / 10;
Ay = 1;
Ax = Ay √(1 - ξ^2) ;
P = 0.1;
τ = 0.2;
λ = 400;
λ1 = 400;
λ2 = 720;
n1 = 1 + P ( 2 An / (2 + (Ay)^2/Ax^2 + y^2/Ay^2) + 2 An / (2 + (Ay)^2/Ax^2 + y^2/Ay^2) + 4 Sin[x]^12 + 4 Sin[y]^12 );
nn[x_, y_] = n1 + (-1 + n1) τ (λ^2 - λ1^2) λ2^2 / (λ^2 (λ1^2 - λ2^2));
tlo =
  ContourPlot[nn[x, y], {x, -w, w}, {y, -w, w}, Contours → 20, PlotPoints → 50];
Plot[nn[x, 0], {x, -w, w}, PlotRange → {All, {0, 3}}]
Plot3D[nn[x, y], {x, -w, w}, {y, -w, w}]
```

Rysunek 7.26

```
Plot[1 + 1/3 (1/2 + 1/2 ArcTan[(x - 1)/0.05] / ArcTan[(0 - 1)/0.05]), {x, -2, 2}]
```