

```

p = 2;
q = 3;

m = p / q;
m2 = q / p;
f2[x_] :=
  Piecewise[
    Flatten[Table[{{m (x - 2 π k / p) - π / (2 q), 2 k π / p ≤ x ≤ (2 k + 1) π / p}, {-m (x - 2 π k / p) +
      2 π / q - π / (2 q), (2 k + 1) π / p ≤ x ≤ (2 k + 2) π / p}}, {k, 0, p}], {1, 2}]]
g2[x_] :=
  Piecewise[Flatten[
    Table[{{m2 (x - 2 π k / q) - π / (2 p), 2 k π / q ≤ x ≤ (2 k + 1) π / q}, {-m2 (x - 2 π k / q) +
      2 π / p - π / (2 p), (2 k + 1) π / q ≤ x ≤ (2 k + 2) π / q}}, {k, 0, q}], {1, 2}]]

fi = FunctionInterpolation[f2[Mod[x, 2 π]], {x, -4 π, 4 π}];
gi = FunctionInterpolation[g2[Mod[x, 2 π]], {x, -4 π, 4 π}];

inside = Abs[4 / π γ]^4 gi[β] + 2 π n / p;
outside = Abs[4 / π γ]^4 fi[β] + 2 π n / q;

insidewashers = Table[SterProj@ZW[γ, β - π / (q 2), inside], {n, 0, 2}];
insideplot = ParametricPlot3D[insidewashers, {γ, 0, π / 4},
  {β, 0, 2 π}, MeshStyle → None, PlotStyle → Blue, PlotPoints → 25];

outsidewashers = Table[SterProj@σ@ZW[γ, β - π / (p 2), outside], {n, 0, 4}];
outsideplot = ParametricPlot3D[outsidewashers, {γ, 0, π / 4},
  {β, 0, 2 π}, MeshStyle → None, PlotStyle → Orange, PlotPoints → 25];

torus = ParametricPlot3D[SterProj@ZW[π / 4, α, β],
  {α, 0, 2 π}, {β, 0, 2 π}, PlotStyle → Opacity[0.2], MeshStyle → None,
  PlotRange → {{-3, 3}, {-3, 3}, {-3, 3}}, Axes → False, Boxed → False];

knot = ParametricPlot3D[RotationTransform[π / q, {0, 0, 1}]@
  SterProj@σ@ZW[π / 4, θ, -p / q θ], {θ, 0, q 2 π}, PlotStyle → {Thick, Green}];

Show[torus, knot, insideplot, outsideplot]

inside /. n → 0
ParametricPlot3D[inside /. n → 0, {γ, 0, π / 4}, {β, 0, 2 π}]
insidewashers =
  Table[ComPolar[{r Exp[I (θ - π / (2 p))], Abs[r Exp[I θ]]^4 f2[τ Arg[r Exp[I θ]]] + 2 π n / q}],
    {n, 0, q}] // ComplexExpand;

```

```

washertest = ComPolar[{r Exp[I (θ - π / (2 p))], Abs[r]^4 fi[θ] + 2 π n / q}] /. n -> 0
ParametricPlot3D[washertest, {θ, 0, 2 π}, {r, 0, 1}]

Show[Plot3D[Table[Abs[r]^4 fi[θ] + 2 π n / p, {n, 0, p}], {θ, 0, 2 π}, {r, 0.5, 1},
  Exclusions -> None, PlotRange -> {{0, 2 π}, {0.5, 1}, {-2.5, 2 π + 0.5}}],
  Plot3D[Table[Abs[r]^4 gi[θ] + 2 π n / q, {n, 0, q}], {θ, 0, 2 π},
  {r, 1, 0.5}, Exclusions -> None, PlotRange -> All]]

Plot3D[Table[Abs[r]^4 gi[θ] + 2 π n / q, {n, 0, q}],
  {θ, 0, 2 π}, {r, 1, 0.5}, Exclusions -> None, PlotRange -> All]

Plot3D[Table[Abs[r]^4 gi[θ] + 2 π n / q, {n, 0, q}],
  {θ, 0, 2 π}, {r, 0.5, 1}, Exclusions -> None, PlotRange -> All]

Plot3D[Table[Abs[r]^4 fi[θ] + 2 π n / q, {n, 0, q}],
  {θ, 0, 2 π}, {r, -0.5, -1}, Exclusions -> None, PlotRange -> All]

ParametricPlot3D[Table[{θ, r, Abs[r]^4 gi[θ] + 2 π n / q}, {n, 0, 3}],
  {θ, 0, 2 π}, {r, 0, 1}, PlotRange -> {{0, 2 π}, {0, 2}, {0, 2 π}}]

ParametricPlot3D[Table[{θ, r, Abs[r]^4 fi[θ] + 2 π n / q}, {n, -1, 2}],
  {θ, 0, 2 π}, {r, 0, 1}, PlotRange -> {{0, 2 π}, {0, 2}, {0, 2 π}}]

plotstuff =
  TranslationTransform[π / 4 {p, 0, q}] @ (RotationTransform[-π / 2, {0, 1, 0}, {π, 1, π}] /@
    (RotationTransform[π, {0, 0, 1}, {π, 1, π}] /@
      Table[{θ, r, Abs[r]^4 fi[θ] + 2 π n / q}, {n, 0, q + 1}])) // Simplify;

Show[
  ParametricPlot3D[Table[{θ, r, Abs[r]^4 gi[θ] + 2 π n / p}, {n, 0, 3}],
    {θ, 0, 2 π}, {r, 0, 1}, PlotRange -> {{0, 2 π}, {0, 2}, {0, 2 π}}],
  ParametricPlot3D[plotstuff, {θ, 0, 4 π}, {r, 0, 1}, PlotStyle -> Blue],
  ParametricPlot3D[{Mod[θ + π / 2 q, 2 π], 1, Mod[q / p θ, 2 π]},
    {θ, 0, p * q π - 0.01}, Exclusions -> True, PlotStyle -> {Thick, Green}]
]

ParametricPlot3D[plotstuff, {θ, 0, 2 π}, {r, 0, 1}, PlotRange -> All, AxesLabel -> {θ, r, z}]

ParametricPlot3D[{Mod[θ, 2 π], Mod[p / q θ, 2 π], 1},
  {θ, 0, p * q π - 0.01}, Exclusions -> True, PlotStyle -> Green]

```