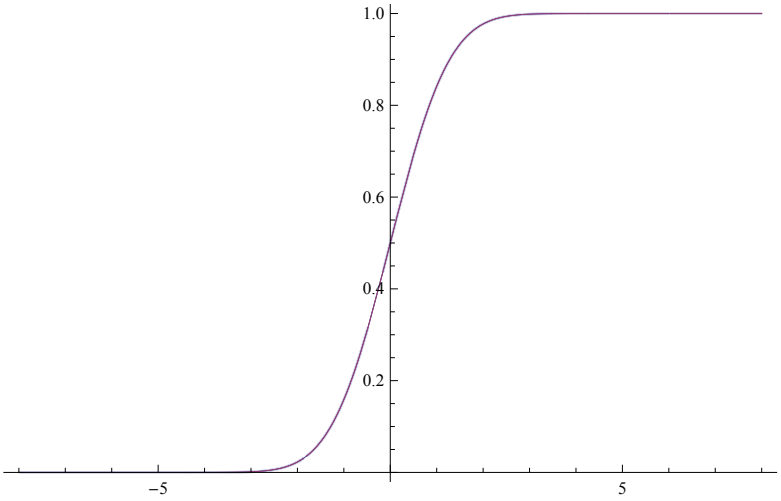
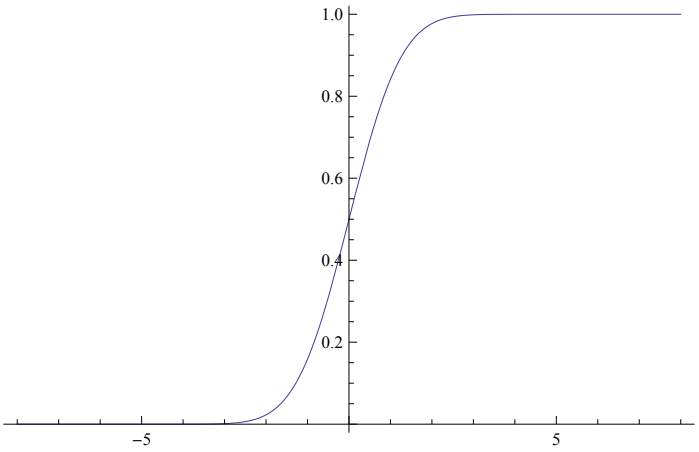
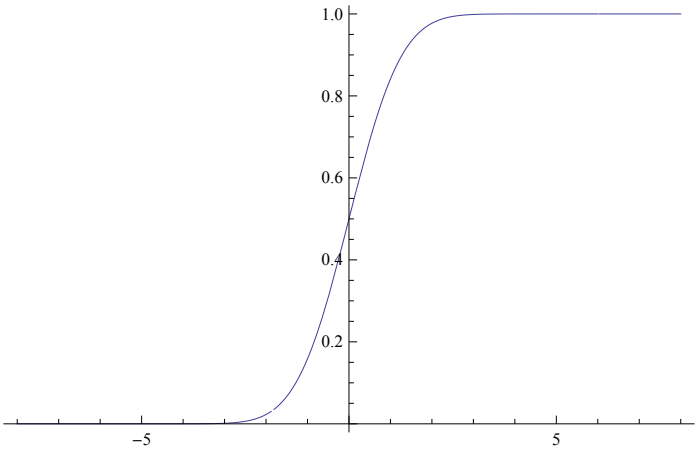
```
Plot[
 {
  CDF[NormalDistribution[], x],
  Piecewise[
   {{1, x > 6},
    {0, -x > 6},
    {approx1[x], 0 ≤ x ≤ 1.87},
    {1 - approx1[-x], 0 ≤ -x ≤ 1.87},
    {approx2[x], 1.87 < x ≤ 6},
    {1 - approx2[-x], 1.87 < -x ≤ 6}}
  ]
 },
 {x, -8, 8},
 Filling → {1 → {2}}]
```




```
Plot[
 {
  CDF[NormalDistribution[], x]
 },
 {x, -8, 8}]
```

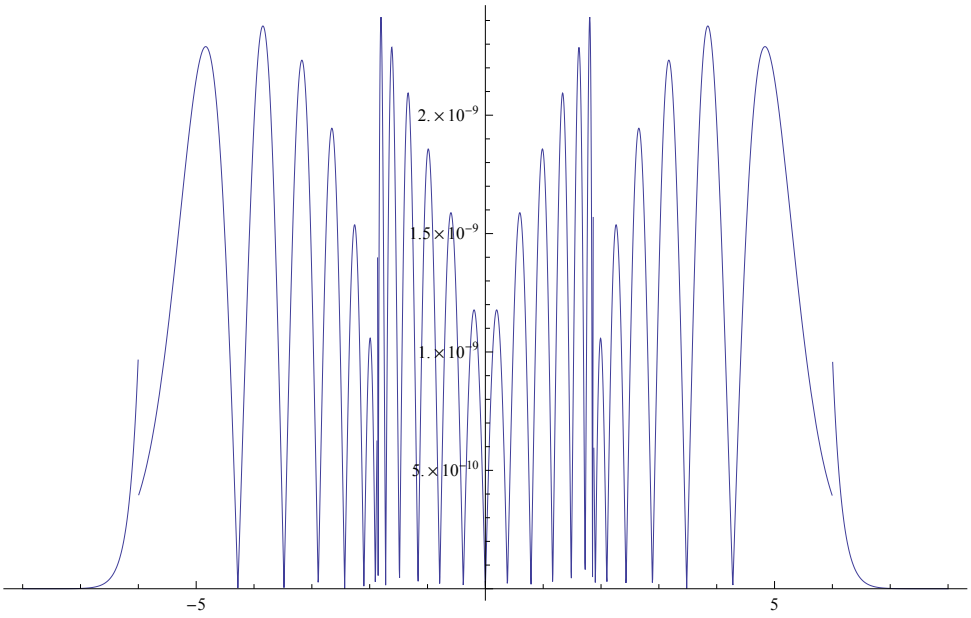


```
Plot[
 {
  Piecewise[
   {{1, x > 6},
    {0, -x > 6},
    {approx1[x], 0 ≤ x ≤ 1.87},
    {1 - approx1[-x], 0 ≤ -x ≤ 1.87},
    {approx2[x], 1.87 < x ≤ 6},
    {1 - approx2[-x], 1.87 < -x ≤ 6}}
  ]
 },
 {x, -8, 8}]
```




```
Plot[
 {
  CDF[NormalDistribution[], x],
  Piecewise[
   {{1, x > 6},
    {0, -x > 6},
    {approx1[x], 0 ≤ x ≤ 1.87},
    {1 - approx1[-x], 0 ≤ -x ≤ 1.87},
    {approx2[x], 1.87 < x ≤ 6},
    {1 - approx2[-x], 1.87 < -x ≤ 6}}
  ]
 },
 {x, -8, 8},
 Filling → {1 → {2}}]
```

```
Plot[
 {
  Abs[CDF[NormalDistribution[], x] -
    Piecewise[
     {{1, x > 6},
      {0, -x > 6},
      {approx1[x], 0 ≤ x ≤ 1.87},
      {1 - approx1[-x], 0 ≤ -x ≤ 1.87},
      {approx2[x], 1.87 < x ≤ 6},
      {1 - approx2[-x], 1.87 < -x ≤ 6}}
    ]]
 },
 {x, -8, 8}]
```



$$\text{approx1}[x\_] := 0.5 + \frac{x * \left(a0 + \left(a1 + a2 * x^2\right) * x^2\right)}{1 + \left(b1 + \left(b2 + b3 * x^2\right) * x^2\right) * x^2}$$

```
approx2[x_] := 1.0 - ((c0 + (c1 + c2 * x) * x) / (d0 + (d1 + (d2 + d3 * x) * x) * x))^16.0

a0 := 0.398942270991;
a1 := 0.020133760596;
a2 := 0.002946756074;
b1 := 0.217134277847;
b2 := 0.018576112465;
b3 := 0.000643163695;
c0 := 1.398247031184;
c1 := -0.360040248231;
c2 := 0.022719786588;
d0 := 1.460954518699;
d1 := -0.305459640162;
d2 := 0.038611796258;
d3 := -0.003787400686;
```