

```
In [18]: print('Jaeheon Kim, Nico Bui, Alex Dao, Vishwa Kumaravel')
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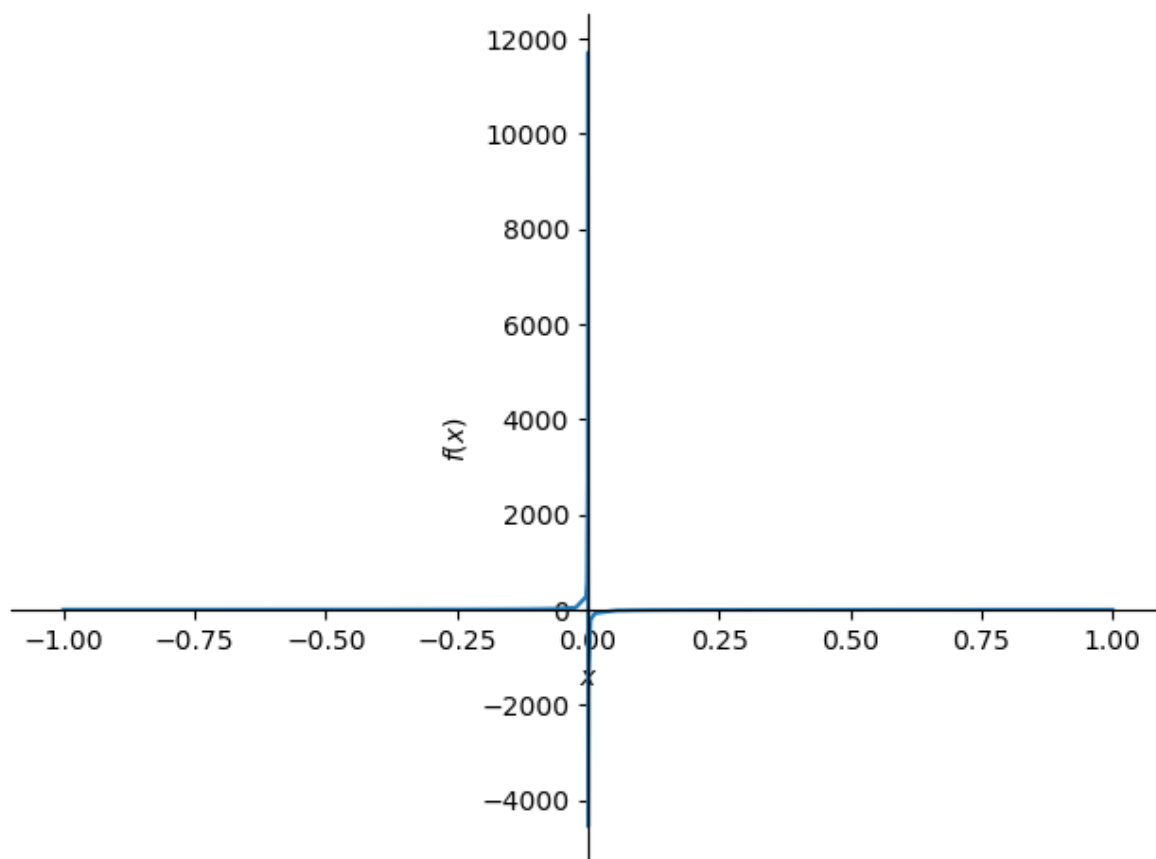
Jaeheon Kim, Nico Bui, Alex Dao, Vishwa Kumaravel

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In [7]: from sympy import *
```

```
In [8]: x = symbols('x')

f = ((2*(3*x))-1)/x
numlist = [-0.1, -0.01, -0.001, -0.0001, 0.1, 0.01, 0.001, 0.0001]
print('(1a)')
for number in numlist :
    print ( f . subs (x , number ) )
print(' (1b)')
plot(f,(x,-1,1))
print(' (1c)')
t= limit(f,x,0)
print(float(t))
```

(1a)  
 16.0000000000000  
 106.000000000000  
 1006.00000000000  
 10006.0000000000  
 -4.00000000000000  
 -94.0000000000000  
 -994.000000000000  
 -9994.00000000000  
 (1b)



(1c)  
 -inf

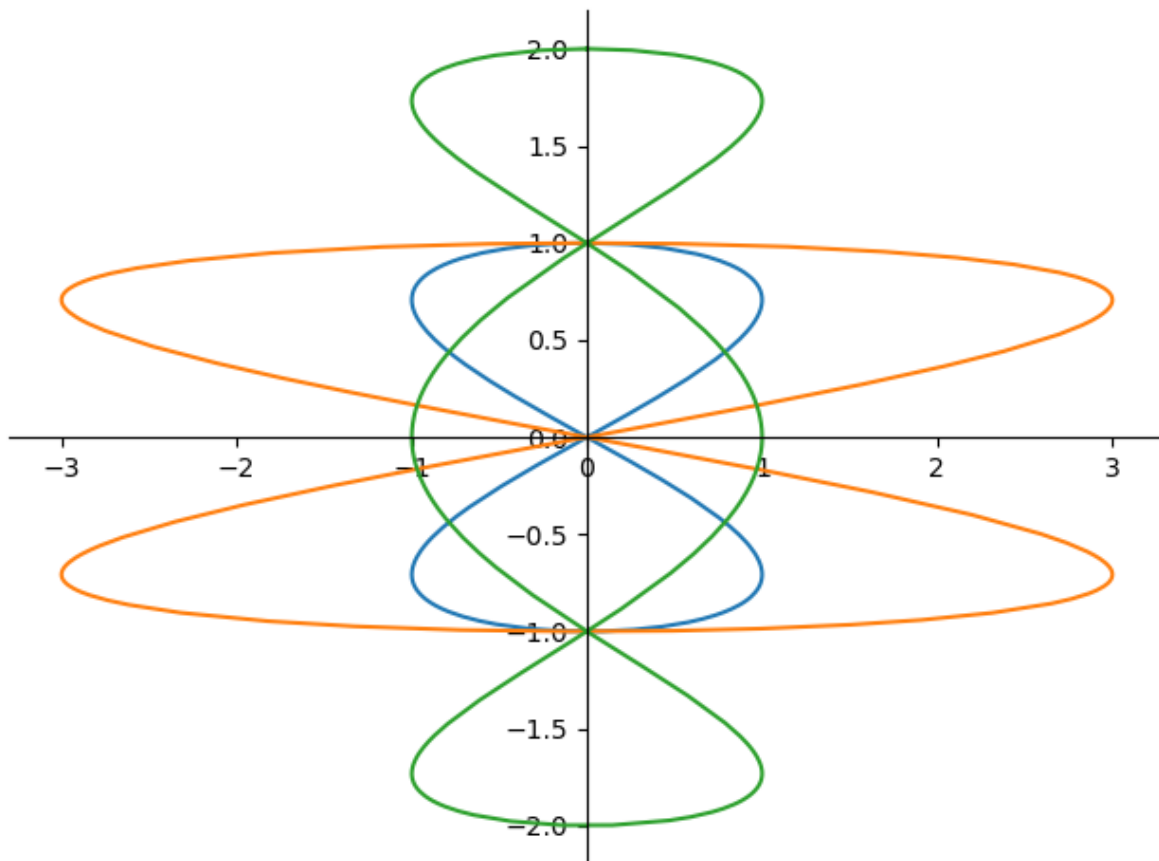
```
In [9]: from sympy.plotting import (plot,plot_parametric)
print("2(a)")
t=symbols('t')
```

```

x=sin(2*t)
y=cos(t)
x2=3*x
y2=y
x3=sin(3*t)
y3=2*y
plot_parametric((x,y), (x2,y2), (x3,y3), (t,0,2*pi))
print("2(b)")
print("Increasing a caused a Horizontal Stretch")
print("Increasing b caused a Vertical Stretch")
print("Increasing n caused the period to become smaller")

```

2(a)



2(b)

Increasing a caused a Horizontal Stretch  
 Increasing b caused a Vertical Stretch  
 Increasing n caused the period to become smaller

```

In [10]: print('3(a)')
x = symbols('x')
expr = x*(100-2*x)
expand(expr)

```

3(a)

Out[10]:  $-2x^2 + 100x$ 

```

In [11]: print('3(b)')
expr.subs(x,15)

```

3(b)

Out[11]: 1050

```

In [12]: nexpr = x*(100-2*x)-1200
print('3(c)')
print(f'x could be both {solve(nexpr,x)} to be to achieve an enclosed area of 1200')

```

3(c)

x could be both  $[20, 30]$  to be to achieve an enclosed area of 1200 square yards

In [ ]: