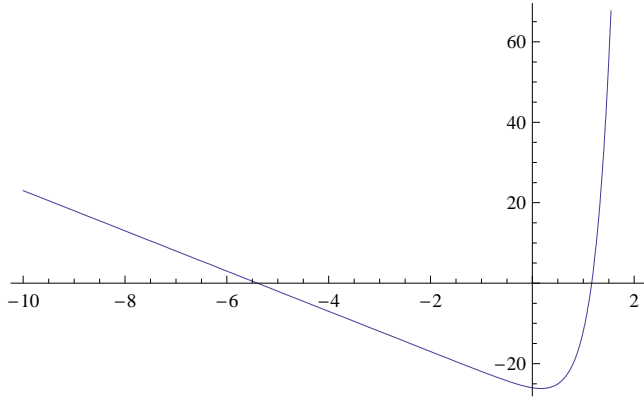


```
Solve[{x + y == 5, 2 x + 6 y == 23}, {x, y}]
```

```
{{x -> 7/4, y -> 13/4}}
```

```
Plot[e3x - 5 x - 27, {x, -10, 2}]
```



```
FindRoot[e3x - 5 x - 27, {x, -5}]
```

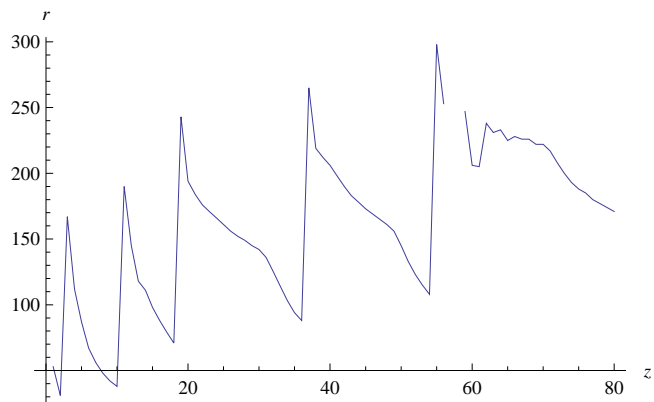
```
{x -> -5.4}
```

```
FindRoot[e3x - 5 x - 27, {x, 1}]
```

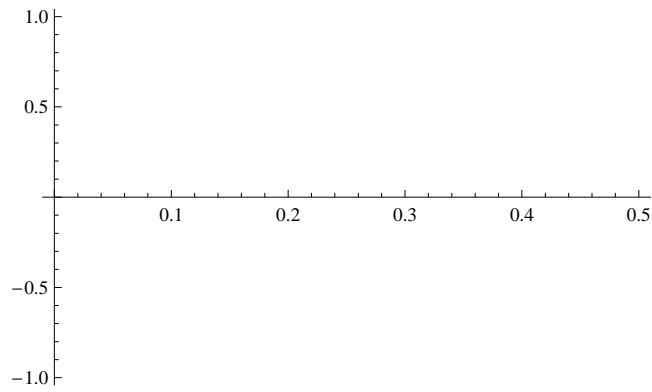
```
{x -> 1.16366}
```

2. The two roots are 1.16 and -5.4.

```
ListLinePlot[Table[ElementData[z, "AtomicRadius"], {z, 80}], AxesLabel -> {z, r}]
```



```
Plot[ (.5 * x * x) / (Sqrt (1 / (1 - x * x)) - 1), {x, 0, .5}]
```



```
D [ A e-x2/(2b2), x ]
```

$$-\frac{A e^{-\frac{x^2}{2b^2}} x}{b^2}$$

```
D [ -\frac{A e-x2/(2b2) x}{b2}, x ]
```

$$\frac{A e^{-\frac{x^2}{2b^2}} x^2}{b^4} - \frac{A e^{-\frac{x^2}{2b^2}}}{b^2}$$

```
D [ A Sin[k x] Sin[q y], x ]
```

$$A k \cos(k x) \sin(q y)$$

$$\int (\sin[\pi x / a])^2 dx$$

$$\frac{x}{2} - \frac{a \sin\left(\frac{2\pi x}{a}\right)}{4\pi}$$

$$\int_0^a (\sin[\pi x / a])^2 dx$$

$$\frac{a}{2}$$

```
data = {{1, 1.008}, {2, 4.003}, {6, 12},  
        {8, 15.995}, {17, 34.969}, {26, 55.939}, {82, 207.977}, {92, 238.049}};
```

```
ListPlot[data, AxesLabel -> {Z, amu}]
```

