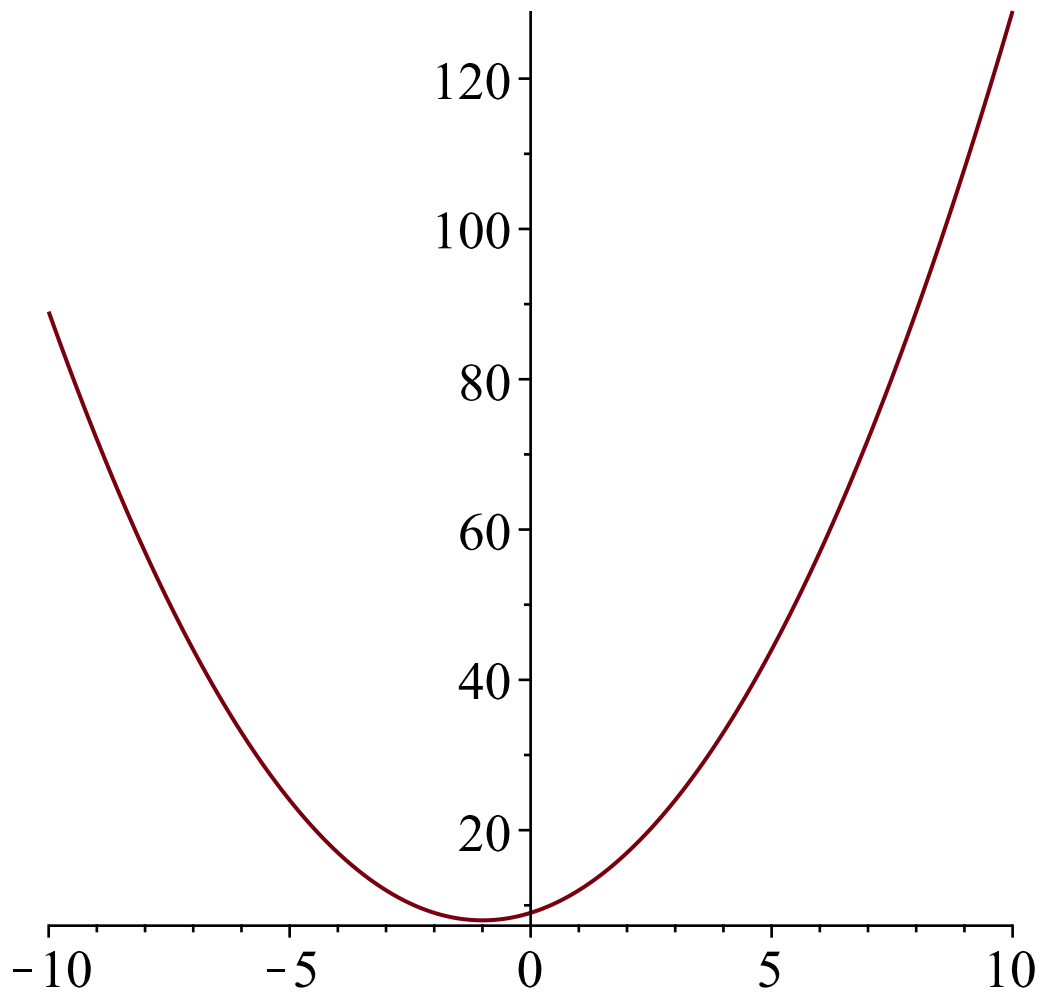
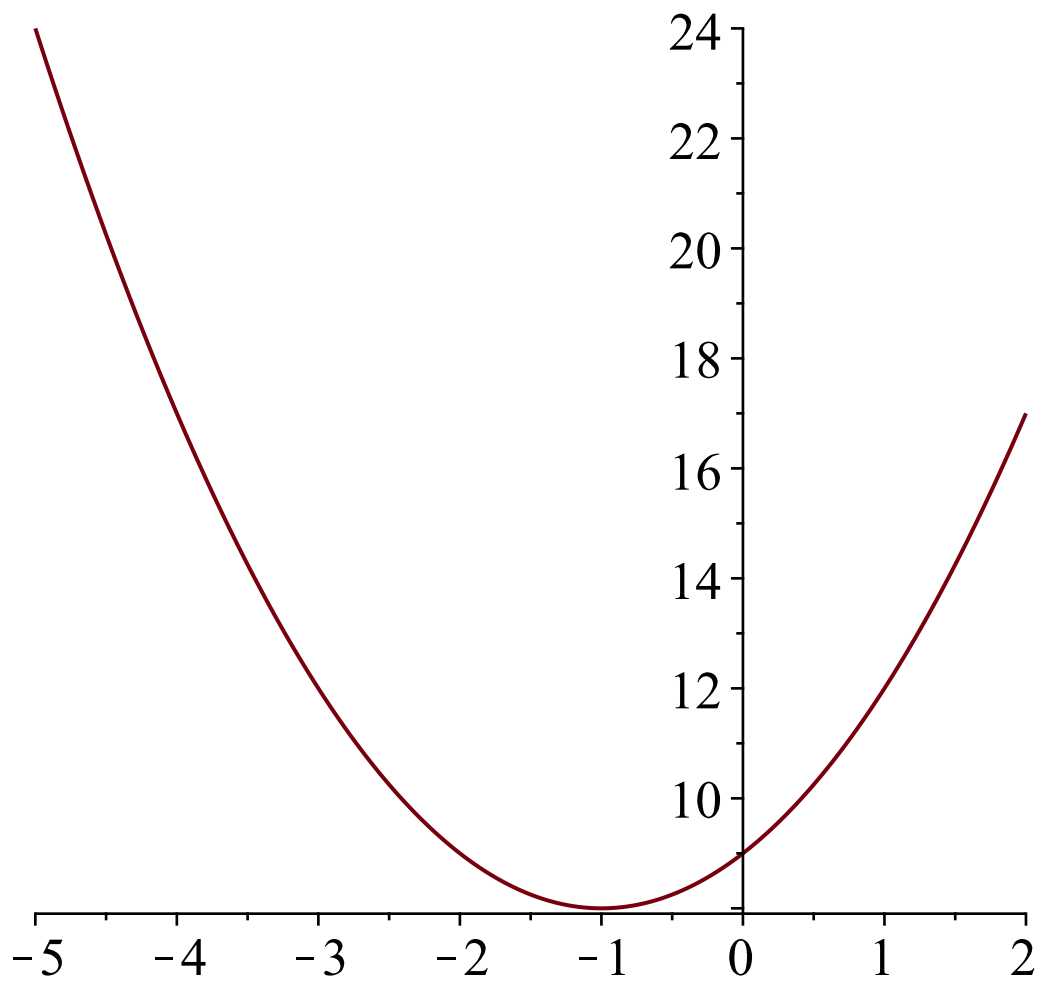


<code>> f := x → x² + 2 x + 1</code>	$f := x \mapsto x^2 + 2x + 1$	(1)
<code>> f(0)</code>	1	(2)
<code>> f(1)</code>	4	(3)
<code>> f(y)</code>	$y^2 + 2y + 1$	(4)
<code>> f(x²)</code>	$x^4 + 2x^2 + 1$	(5)
<code>> f(x² - 10)</code>	$(x^2 - 10)^2 + 2x^2 - 19$	(6)
<code>> expand(f(x² - 10))</code>	$x^4 - 18x^2 + 81$	(7)
<code>> expand((x² + 8)³)</code>	$x^6 + 24x^4 + 192x^2 + 512$	(8)
<code>> expand((x + 9) · (5x + 1))</code>	$5x^2 + 46x + 9$	(9)
<code>> solve(5x² + 46x + 9)</code>	$-\frac{1}{5}, -9$	(10)
<code>> plot(f)</code>		



```
> plot(f, -5..2)
```

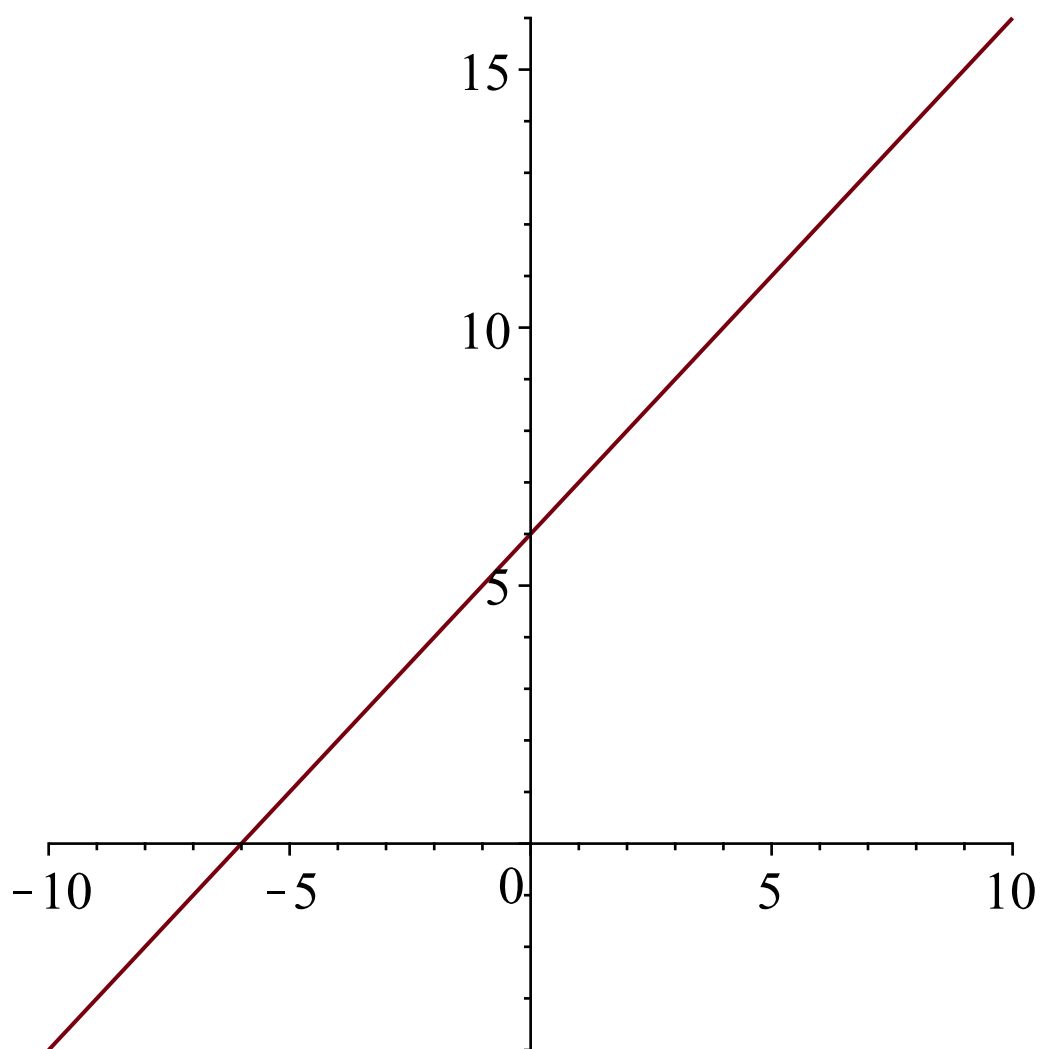


```
> g := x → x + 6
```

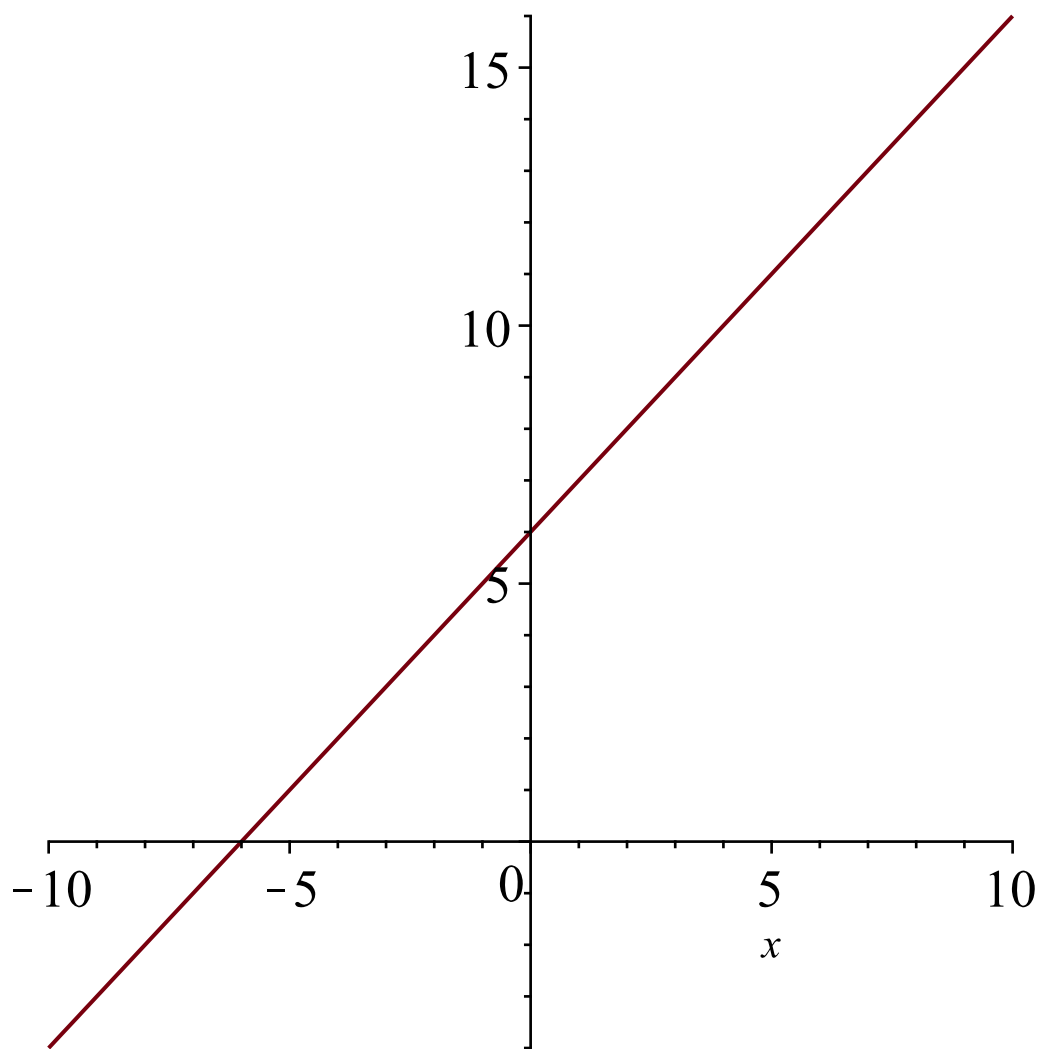
```
g := x ↦ x + 6
```

```
> plot(g)
```

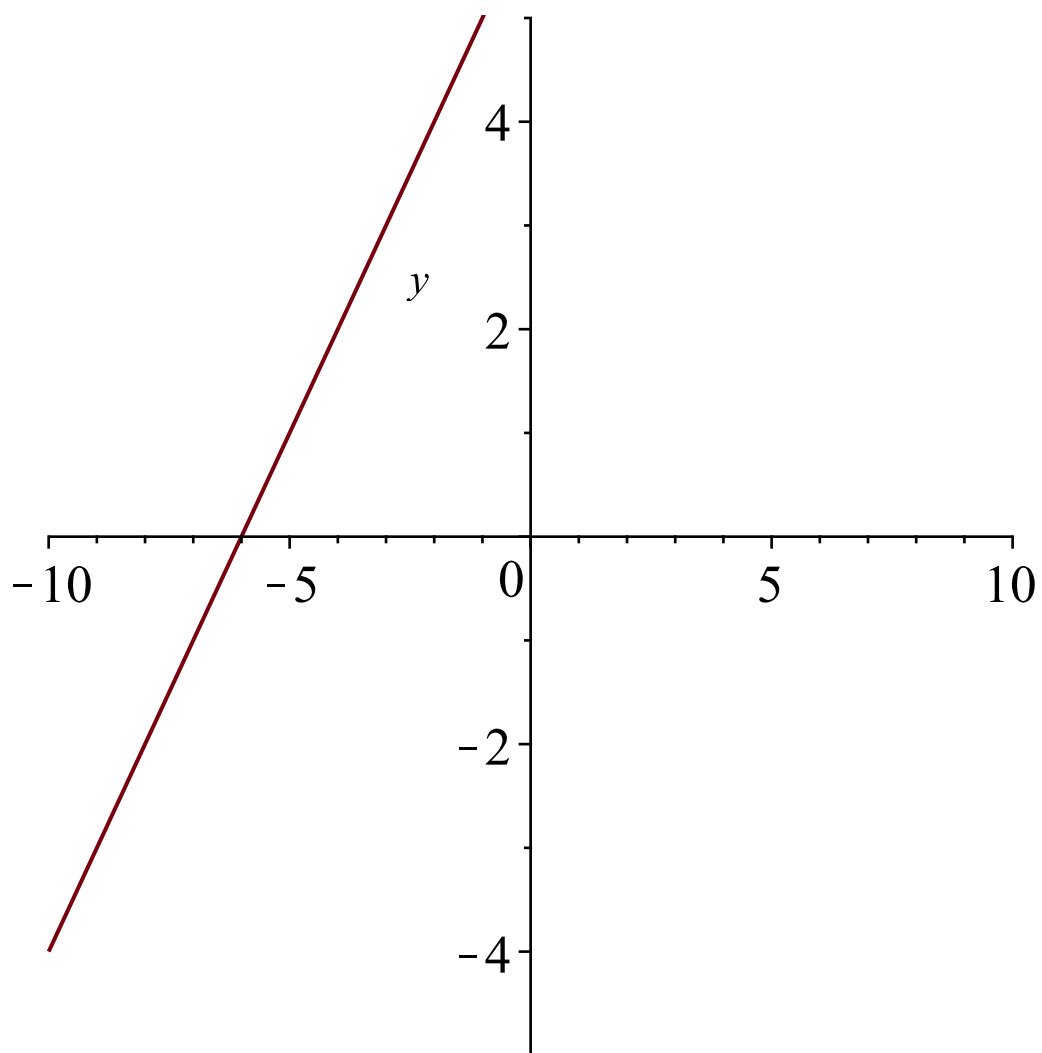
(11)



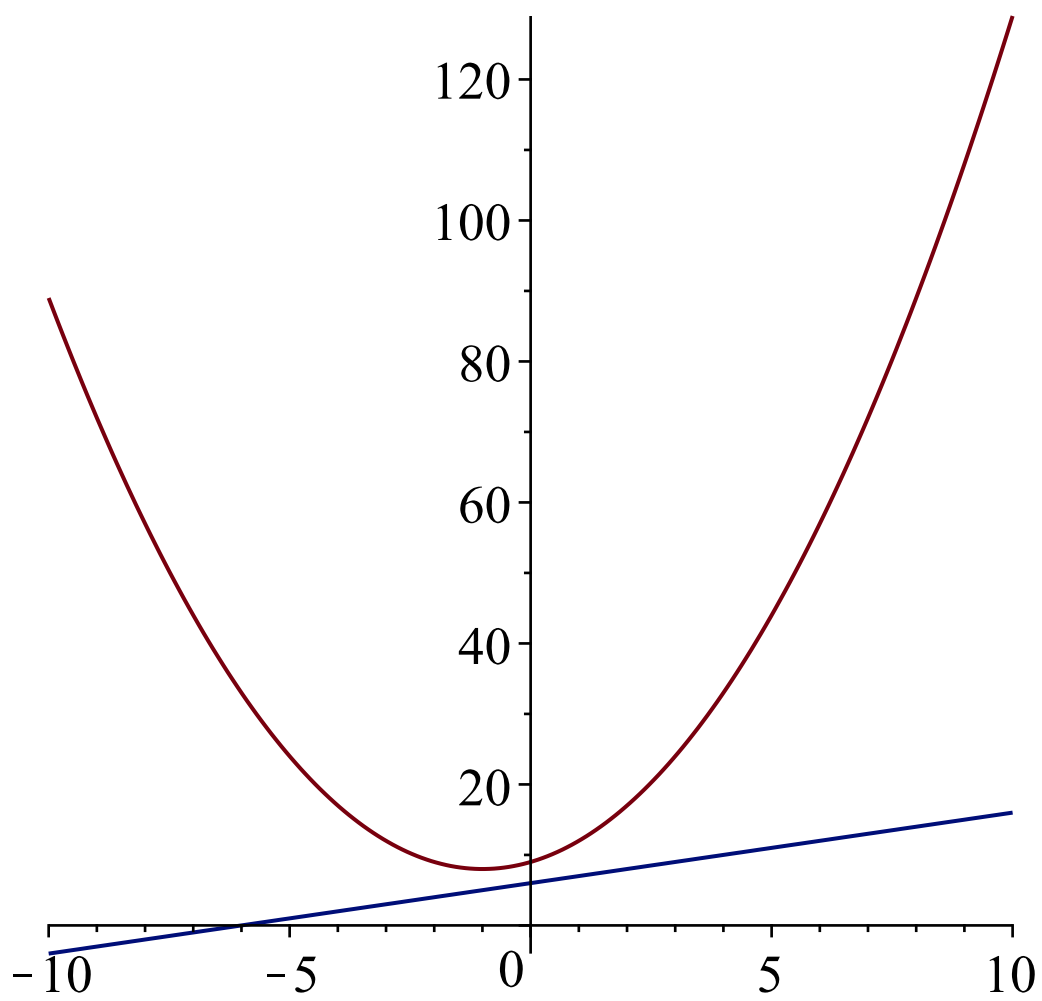
> *plot(x + 6)*



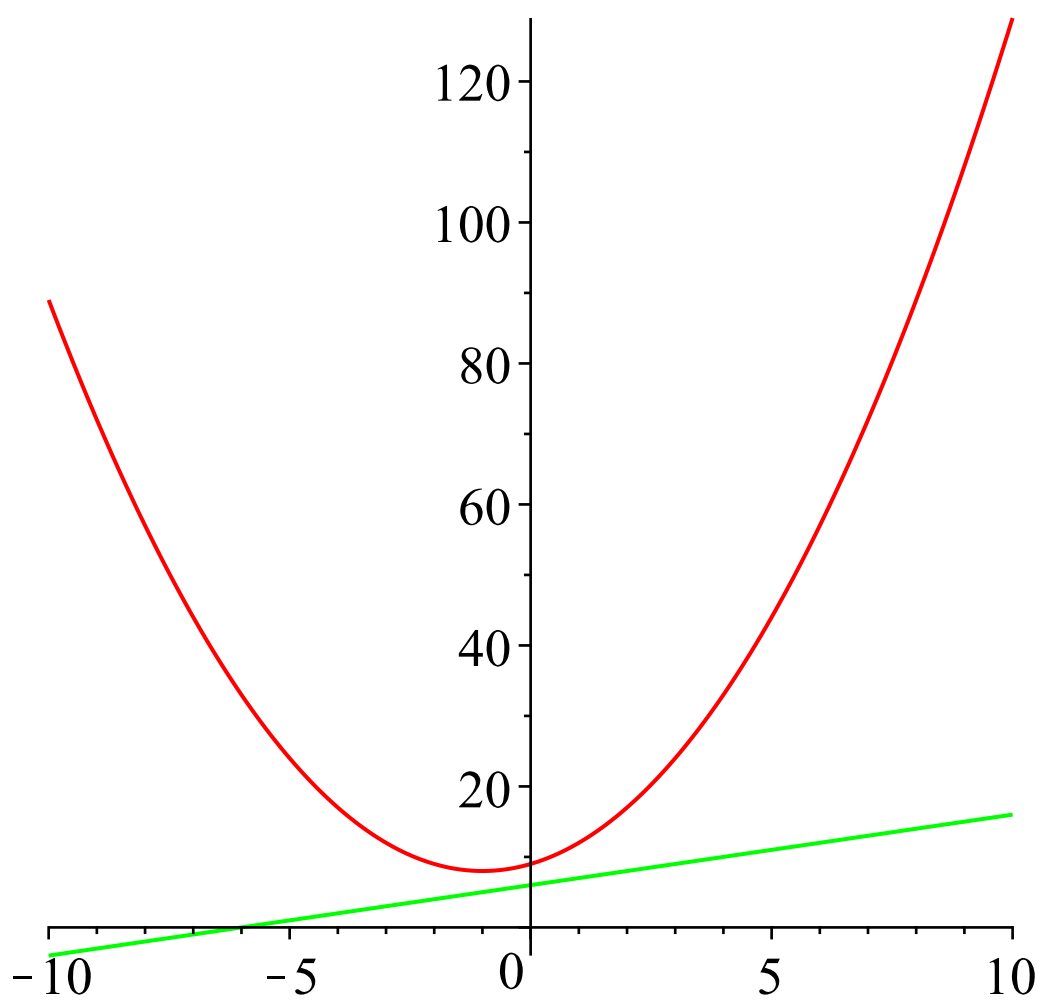
```
> plot(g, -10..10, y=-5..5)
```



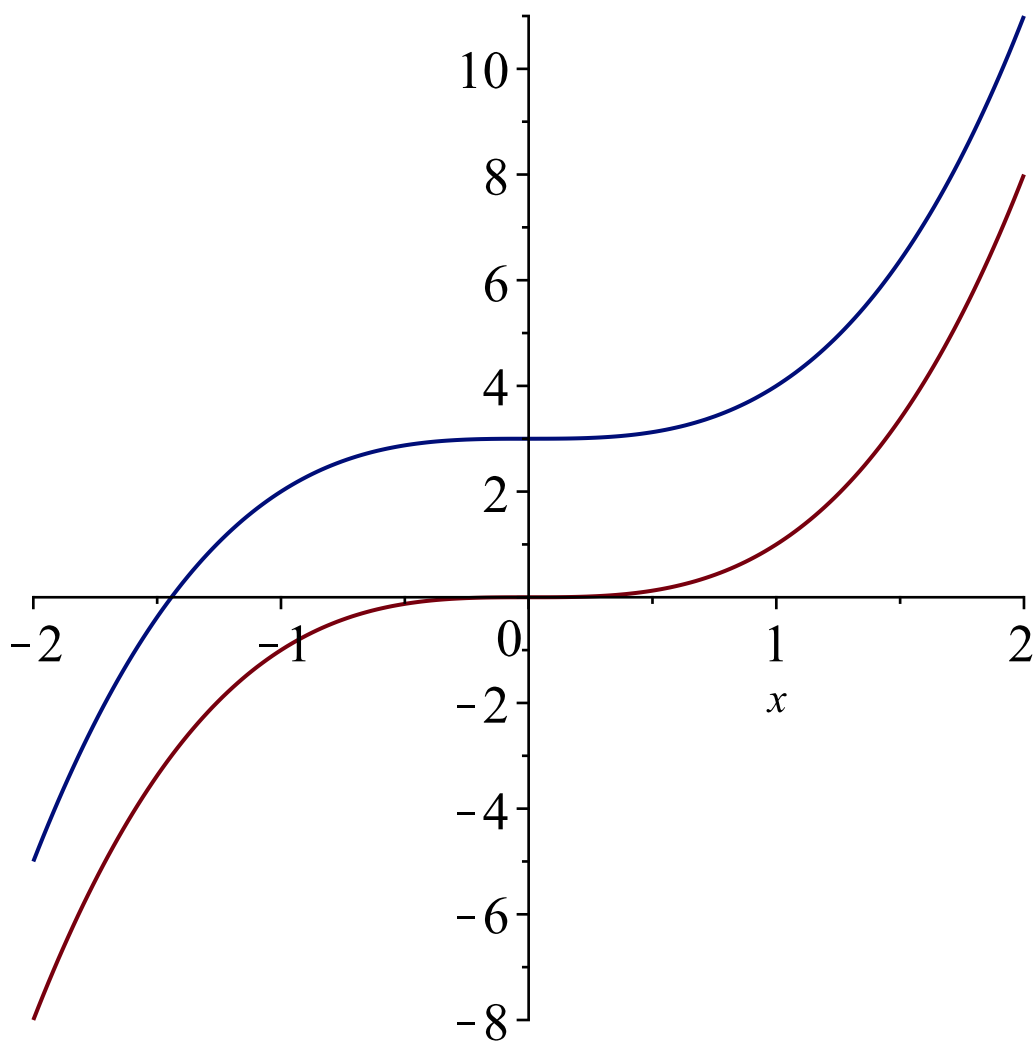
```
> plot([f, g])
```



```
> plot([f, g], color = [red, green])
```



```
> plot([x^3, x^3 + 3], x=-2..2)
```

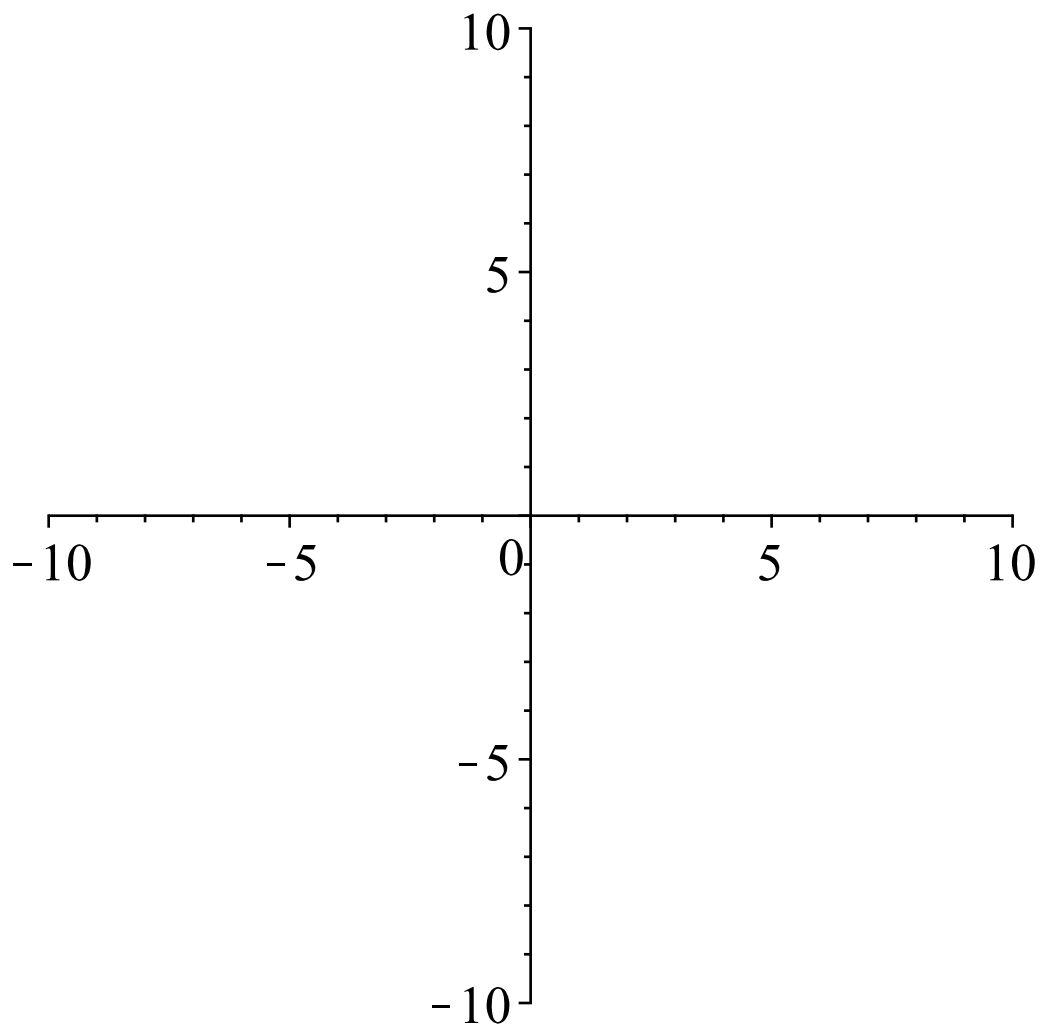
```
> f := x -> sin(x + pi)
```

```
f := x ↦ sin(x + π)
```

(12)

```
> plot(f)
```

Warning, unable to evaluate the function to numeric values in the region; see the plotting command's help page to ensure the calling sequence is correct

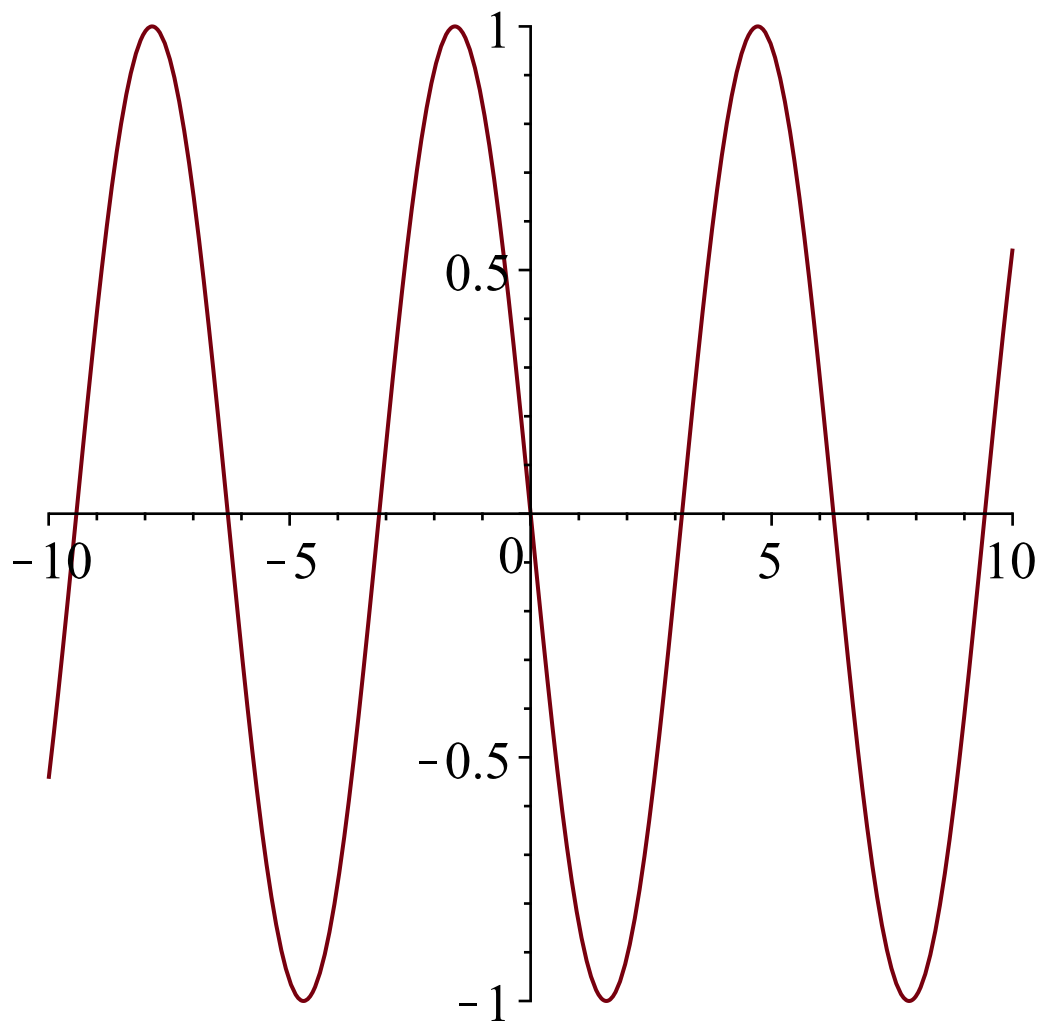


```
> f := x -> sin(x + Pi)
```

```
f := x ↦ sin(x + π)
```

```
> plot(f)
```

(13)



```
> h1 := x → sin(x)
```

```
h1 := x ↦ sin(x)
```

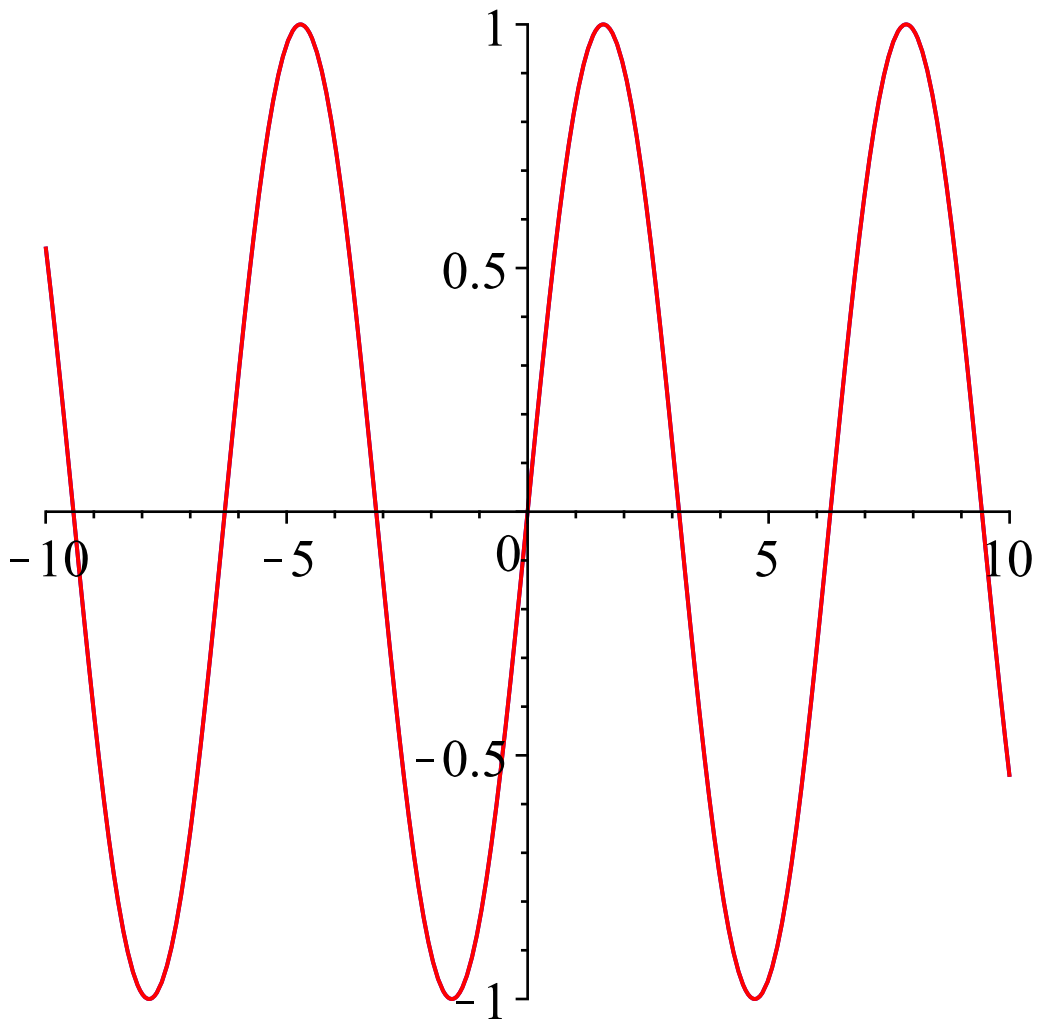
(14)

```
> h2 := x → cos( (Pi/2) - x )
```

```
h2 := x ↦ cos( -x + π/2 )
```

(15)

```
> plot([h1, h2], color = [blue, red])
```



$$\text{> } g1 := x \rightarrow x^0$$

$$g1 := x \mapsto 1$$

(16)

$$\text{> } g2 := x \rightarrow x^0 + x^1$$

$$g2 := x \mapsto 1 + x$$

(17)

$$\text{> } g3 := x \rightarrow x^0 + x^1 + x^2$$

$$g3 := x \mapsto x^2 + x + 1$$

(18)

$$\text{> } g4 := x \rightarrow x^0 + x^1 + x^2 + x^3$$

$$g4 := x \mapsto x^3 + x^2 + x + 1$$

(19)

$$\text{> } g5 := x \rightarrow x^0 + x^1 + x^2 + x^3 + x^4$$

$$g5 := x \mapsto x^4 + x^3 + x^2 + x + 1$$

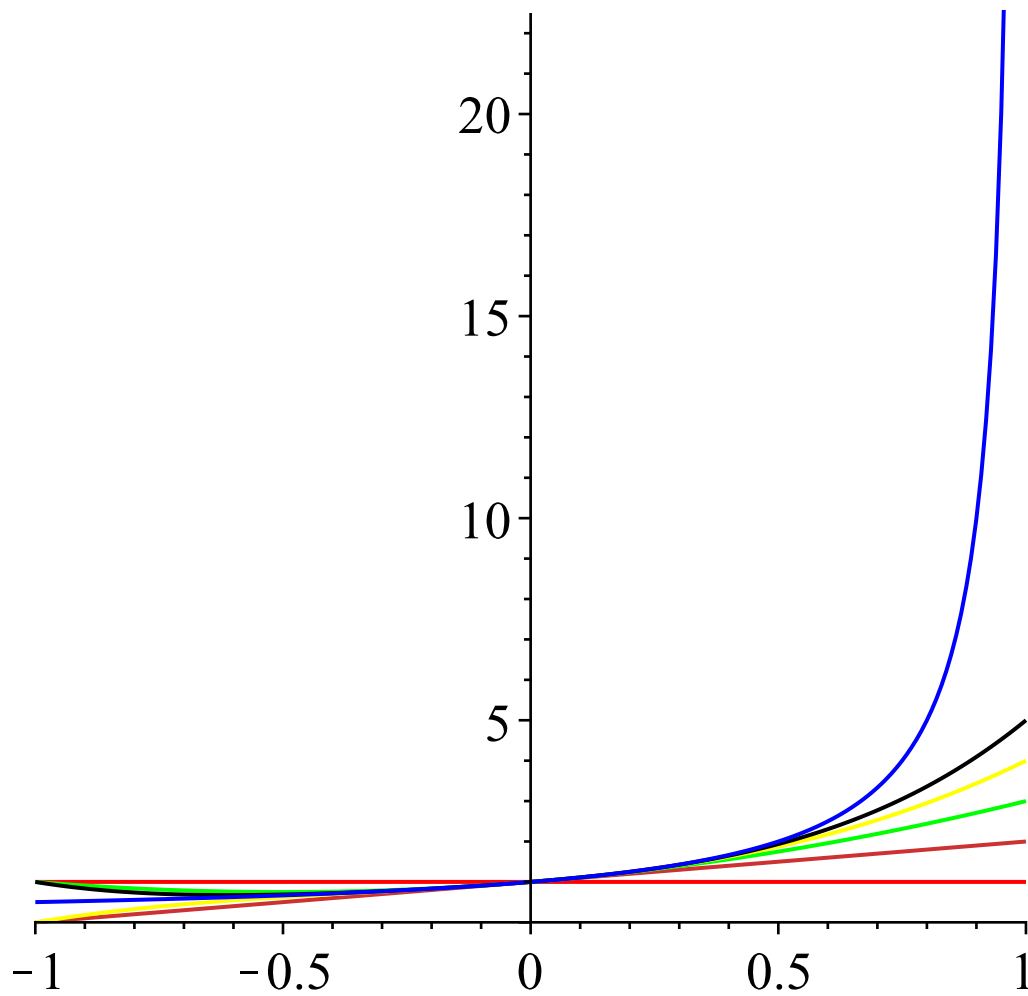
(20)

$$\text{> } g6 := x \rightarrow \frac{1}{1-x}$$

$$g6 := x \mapsto \frac{1}{1-x}$$

(21)

$$\text{> } \text{plot}([g1, g2, g3, g4, g5, g6], -1..1, \text{color} = [\text{red}, \text{orange}, \text{green}, \text{yellow}, \text{black}, \text{blue}])$$

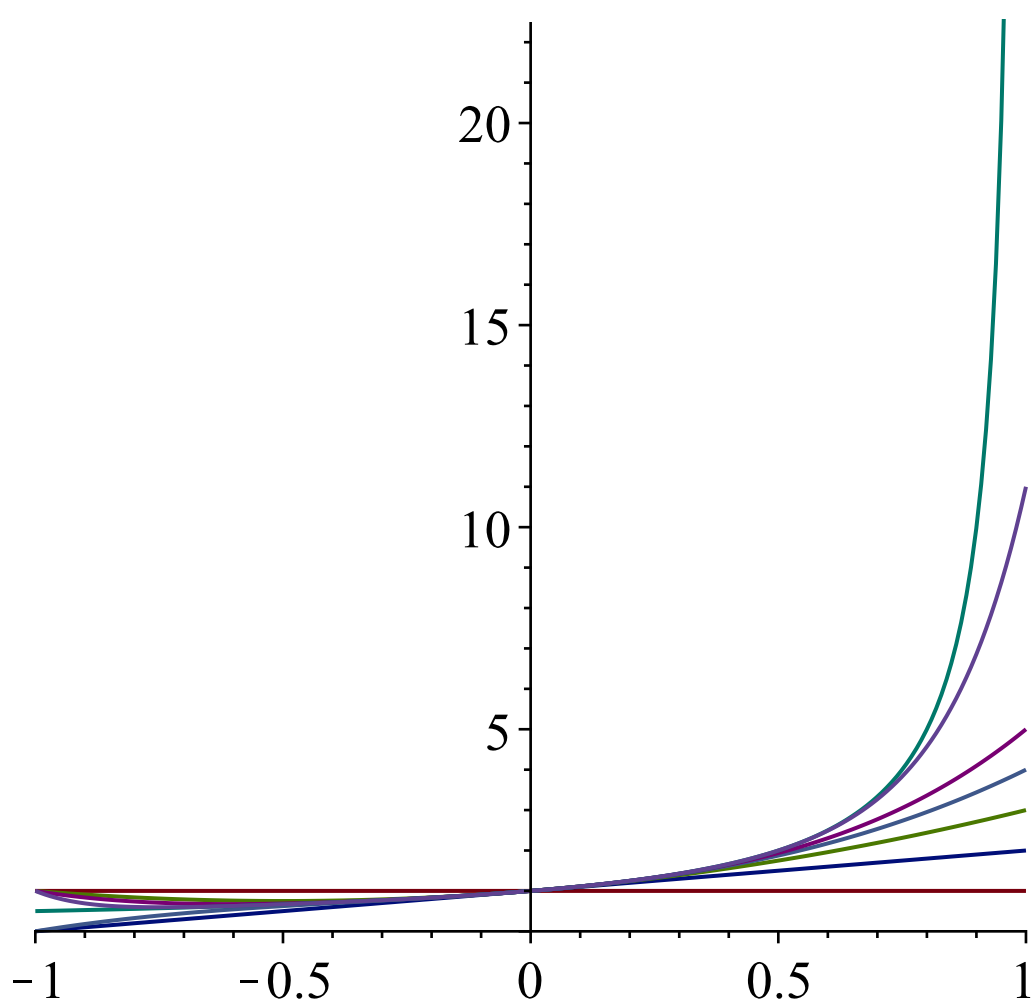


```

> g7 := x -> x^0 + x^1 + x^2 + x^3 + x^4 + x^5 + x^6 + x^7 + x^8 + x^9 + x^10
      g7 := x ↦ x^10 + x^9 + x^8 + x^7 + x^6 + x^5 + x^4 + x^3 + x^2 + x + 1
> plot([g1, g2, g3, g4, g5, g6, g7], -1..1)

```

(22)



> f4 := x → x!

$f4 := x \mapsto x!$

(23)

> f4(3)

6

(24)

> 3!

6

(25)

> f5 := x → sqrt(x)

$f5 := x \mapsto \sqrt{x}$

(26)

> f5(64)

8

(27)

> f6 := x → exp(x)

$f6 := x \mapsto e^x$

(28)

> sum($\frac{1}{2^n}, n = 0 \dots \text{infinity}$)

2

(29)

>