```
with(plots):
f := x→x^2
```

$$f := x \mapsto x^2 \tag{1}$$

```
g := x→sqrt(x)
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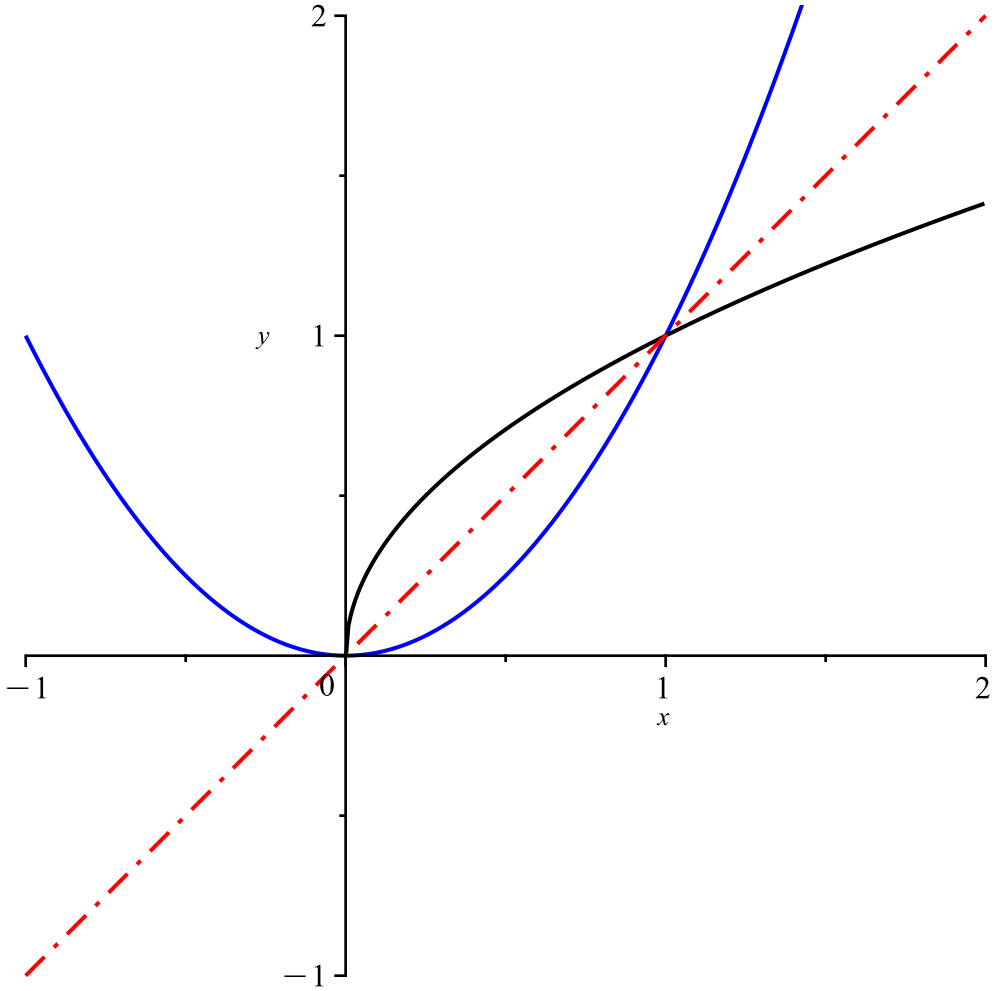
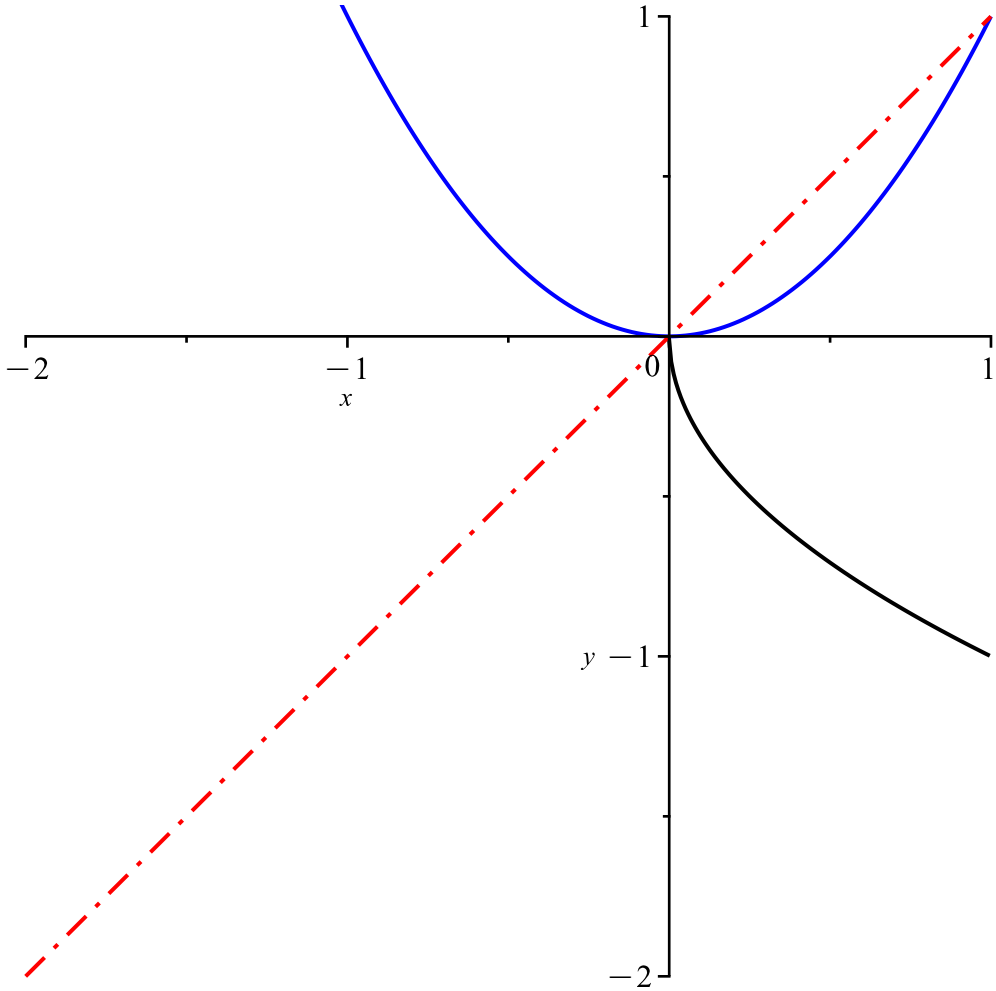
$$g := x \mapsto \sqrt{x} \tag{2}$$

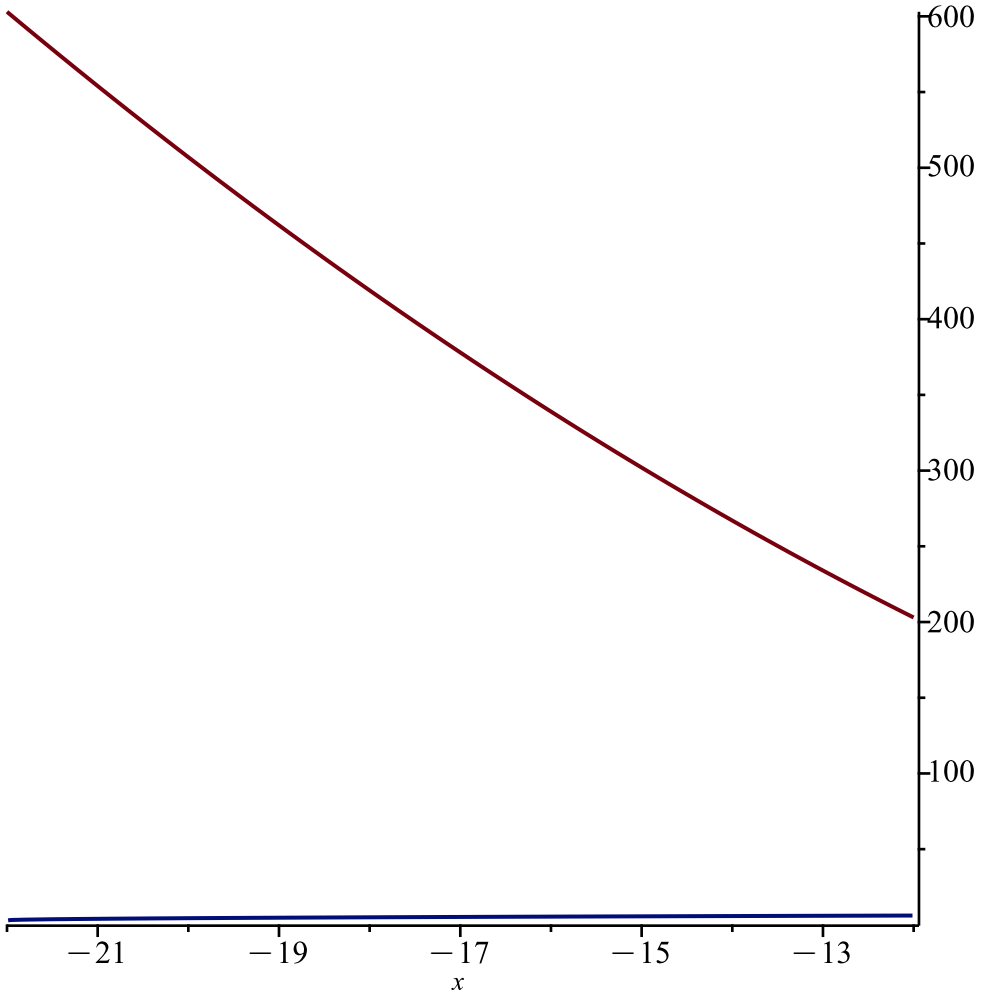
```
plot([f(x), g(x), x], x = -1..2, y = -1..2, color = [blue, black, red], linestyle = [solid, solid, dashdot])
```




```
plot([f(x), -g(x), x], x = -2..1, y = -2..1, color = [blue, black, red], linestyle = [solid, solid, dashdot])
```



$plot(\,[x^2 - 6 \cdot x - 13, 3 + \mathrm{sqrt}(x + 22)\,],\,)$



$f := x \to 3 \cdot x^3 + 4 \cdot x^2 + 6 \cdot x + 5$

$$f := x \mapsto 3 \cdot x^3 + 4 \cdot x^2 + 6 \cdot x + 5 \tag{3}$$

$solve(y = f(x), x)$

$$\frac{\left(-2780 + 972\,y + 36\sqrt{729\,y^2 - 4170\,y + 8673}\right)^{1/3}}{18} \tag{4}$$

$$-\frac{76}{9\left(-2780 + 972\,y + 36\sqrt{729\,y^2 - 4170\,y + 8673}\right)^{1/3}} - \frac{4}{9},$$

$$-\frac{\left(-2780 + 972\,y + 36\sqrt{729\,y^2 - 4170\,y + 8673}\right)^{1/3}}{36}$$

$$+\frac{38}{9\left(-2780 + 972\,y + 36\sqrt{729\,y^2 - 4170\,y + 8673}\right)^{1/3}} - \frac{4}{9}$$

$$+\frac{1}{2}\left(I\sqrt{3}\left(\frac{\left(-2780 + 972\,y + 36\sqrt{729\,y^2 - 4170\,y + 8673}\right)^{1/3}}{18}\right.\right.$$

$$+\frac{76}{9\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}\Bigg)\Bigg),$$

$$-\frac{\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}{36}$$

$$+\frac{38}{9\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}-\frac{4}{9}$$

$$-\frac{1}{2}\left(I\sqrt{3}\left(\frac{\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}{18}\right.\right.$$

$$\left.\left.+\frac{76}{9\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}\right)\right)$$

$\%[1]$

$$\frac{\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}{18}$$

$$-\frac{76}{9\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}-\frac{4}{9} \tag{5}$$

$g := y \to \dfrac{\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}{18}$

$$-\frac{76}{9\left(-2780+972\,y+36\sqrt{729\,y^2-4170\,y+8673}\right)^{1/3}}-\frac{4}{9}$$

$g := y \mapsto \dfrac{\left(-2780+972\cdot y+36\cdot\sqrt{729\cdot y^2-4170\cdot y+8673}\right)^{1/3}}{18}$

$$-\frac{76}{9\cdot\left(-2780+972\cdot y+36\cdot\sqrt{729\cdot y^2-4170\cdot y+8673}\right)^{1/3}}-\frac{4}{9} \tag{6}$$

$gp := \mathrm{D}(g)$

$$gp := y \mapsto \frac{972+\dfrac{18\cdot(1458\cdot y-4170)}{\sqrt{729\cdot y^2-4170\cdot y+8673}}}{54\cdot\left(-2780+972\cdot y+36\cdot\sqrt{729\cdot y^2-4170\cdot y+8673}\right)^{2/3}}$$

$$+\frac{76\cdot\left(972+\dfrac{18\cdot(1458\cdot y-4170)}{\sqrt{729\cdot y^2-4170\cdot y+8673}}\right)}{27\cdot\left(-2780+972\cdot y+36\cdot\sqrt{729\cdot y^2-4170\cdot y+8673}\right)^{4/3}} \tag{7}$$

$gp(0)$

$$\frac{972 - \frac{25020\sqrt{8673}}{2891}}{54\left(-2780 + 252\sqrt{177}\right)^{2/3}} + \frac{76\left(972 - \frac{25020\sqrt{8673}}{2891}\right)}{27\left(-2780 + 252\sqrt{177}\right)^{4/3}} \tag{8}$$

$evalf(\%)$

$$0.1428571426 \tag{9}$$

$evalf\left(\frac{1}{6}\right)$

$$0.1666666667 \tag{10}$$

$fp := \mathrm{D}(f)$

$$fp := x \mapsto 9 \cdot x^2 + 8 \cdot x + 6 \tag{11}$$

$\frac{1}{fp(0)}$

$$\frac{1}{6} \tag{12}$$

$f := x \to \frac{(x+2)}{x-3}$

$$f := x \mapsto \frac{x+2}{x-3} \tag{13}$$

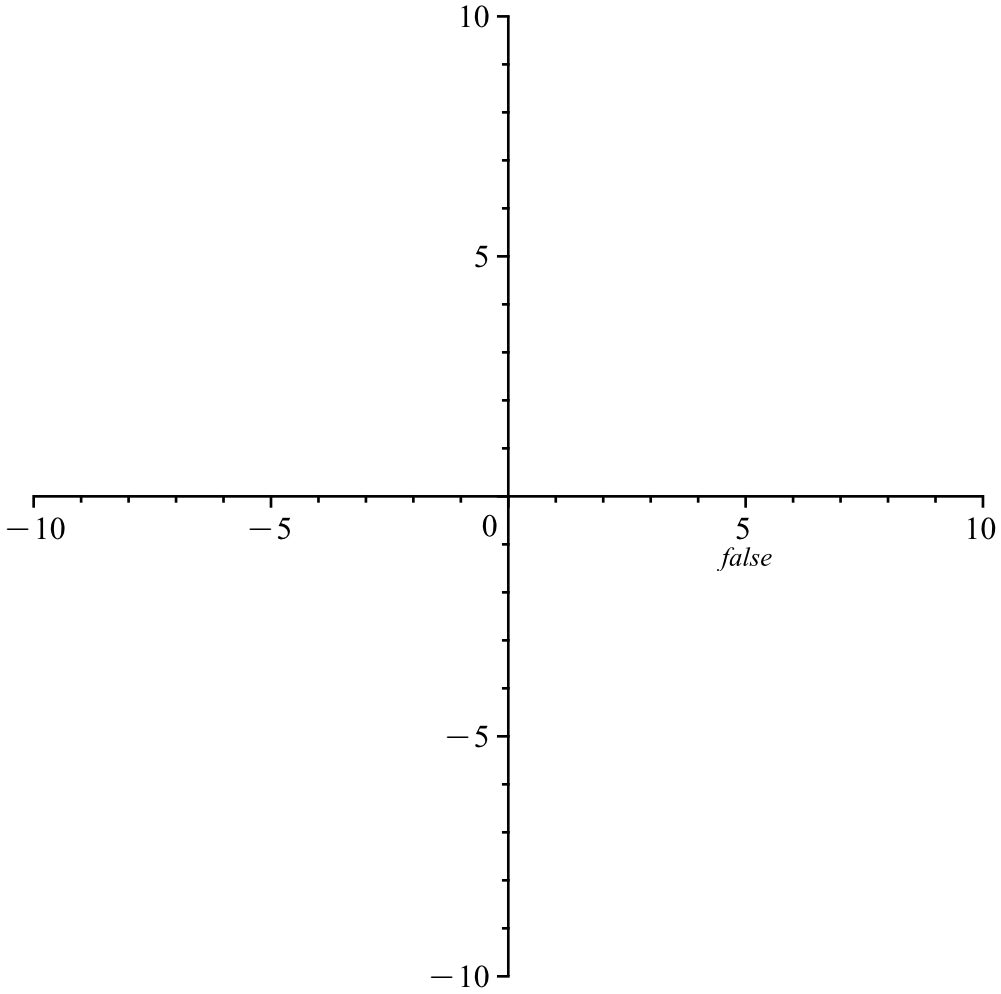
$solve(f(x) = y, x)$

$$\frac{3y+2}{-1+y} \tag{14}$$

$g := y \to \frac{3y+2}{-1+y}$

$$g := y \mapsto \frac{3 \cdot y + 2}{y-1} \tag{15}$$

$plot([f(x), g(x), x], x = -10..10, y = -10..10, discont = true, color = [black, blue, red])$


10
5
−10
−5
0
5
10
false
−5
−10