```
(%i1) kill(all);
(%o0) done
```

```
(%i1) E1: 2*n1=y*x+1/x;
```

$$(\%o1)\quad 2\,n1 = x\,y + \frac{1}{x}$$

```
(%i2) E2: ratsimp(E1*x);
```

$$(\%o2)\quad 2\,n1\,x = x^2\,y + 1$$

```
(%i3) E3: expand(E2/y-2*n1*x/y);
```

$$(\%o3)\quad 0 = -\frac{2\,n1\,x}{y} + \frac{1}{y} + x^2$$

```
(%i4) E4: ratsubst(n1^2+n2^2, y, E3);
```

$$(\%o4)\quad 0 = \frac{(n2^2+n1^2)\,x^2 - 2\,n1\,x + 1}{n2^2+n1^2}$$

```
(%i5) solve(E4,x);
```

$$(\%o5)\quad \left[x = -\frac{\%i\,n2 - n1}{n2^2+n1^2},\ x = \frac{\%i\,n2 + n1}{n2^2+n1^2}\right]$$

```
(%i6) E5: solve(E3,x);
```

$$(\%o6)\quad \left[x = -\frac{\sqrt{n1^2 - y} - n1}{y},\ x = \frac{\sqrt{n1^2 - y} + n1}{y}\right]$$

```
(%i7) E6: ratsubst(n1^2+n2^2, y, E5);
```

$$(\%o7)\quad \left[x = -\frac{\%i\,\left|n2\right| - n1}{n2^2+n1^2},\ x = \frac{\%i\,\left|n2\right| + n1}{n2^2+n1^2}\right]$$

```
(%i8) realpart(%);
```

$$(\%o8)\quad \left[x = \frac{n1}{n2^2+n1^2},\ x = \frac{n1}{n2^2+n1^2}\right]$$