

```
> # Solution to problem 1
> eq1:=(1+5.11/100)*(1+fwd/100)=(1+5.11/100)^2;
      eq1 := 1.051100000 + 0.01051100000fwd = 1.104811210
```

```
> solve(eq1,fwd);
```

5.110000000

```
>
```

```
>
```

```
# Solution to problem 2a
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```
> c1:=3.: p1:=98.:
```

```
> c2:=2.: p2:=97.:
```

```
> eq2a1:=p1=(1+y1/100)^(-1)*(100+c1);
```

$$eq2a1 := 98. = \frac{103.}{1 + \frac{1}{100} y1}$$

```
> solve(eq2a1,y1);
```

5.102040816

```
> eq2a2:=p2=(1+y2/100)^(-1)*c2+(1+y2/100)^(-2)*(100+c2);
```

$$eq2a2 := 97. = \frac{2.}{1 + \frac{1}{100} y2} + \frac{102.}{\left(1 + \frac{1}{100} y2\right)^2}$$

```
> solve(eq2a2,y2);
```

3.581045971, -201.5191903

```
>
```

> # Solution to problem 2b

> c1:=3.: p1:=98.:

> c2:=2.: p2:=97.:

> eq2b1:=p1=(1+z1/100)^(-1)\*(100+c1);

$$eq2b1 := 98. = \frac{103.}{1 + \frac{1}{100} z1}$$

> eq2b2:=p2=(1+z1/100)^(-1)\*c2+(1+z2/100)^(-2)\*(100+c2);

$$eq2b2 := 97. = \frac{2.}{1 + \frac{1}{100} z1} + \frac{102.}{\left(1 + \frac{1}{100} z2\right)^2}$$

> solve({eq2b1,eq2b2},{z1,z2});

{z1 = 5.102040816, z2 = -203.5658271}, {z1 = 5.102040816, z2 = 3.565827141}