Solution 17.15

MATLAB can be used to develop the solution:

```
>> format short g
>> x=[1 2 3 4 5]';
>> y=[2.2 2.8 3.6 4.5 5.5]';
>> Z=[ones(size(x)) x 1./x]
Z =
            1            1            1
            1            2          0.5
            1            3      0.33333
            1            4         0.25
            1            5          0.2
>> ZTZ=Z'*Z
ZTZ =
            5           15       2.2833
           15           55            5
       2.2833            5       1.4636
>> ZTy=Z'*y
ZTy =
         18.6
         64.1
        7.025
>> a=inv(ZTZ)*ZTy
a =
       0.3745
      0.98644
      0.84564
```

Therefore, the solution is

$$y = 0.3745 + 0.98644x + \frac{0.84564}{x}$$