NPV Solution

R	15%						
Year		**0**	**1**	**2**	**3**	**4**	**Total**
Discount (1+r)^n		1.000	1.150	1.323	1.521	1.749	
Discount Factor 1/[(1+r)^n]		1.000	0.870	0.756	0.658	0.572	
Costs		$ 500,000.00					
Present Value		$ 500,000.00	$ -	$ -	$ -	$ -	**$ 500,000.00**
Benefits				$ 300,000.00	$ 300,000.00		
Present Value		$ -	$ -	$ 226,843.10	$ 197,254.87	$ -	**$ 424,097.97**
NPV	**-$ 75,902.03**						

- Positive nominal net cash, but negative in real terms!

Practice Question

- What is the ROI for project lobster
  - -75,902.03 / 500,000 = -15.18%

Payback Solution

R	15%						
Year		**0**	**1**	**2**	**3**	**4**	**Total**
Discount (1+r)^n		$ 1.000	$ 1.150	$ 1.323	$ 1.521	$ 1.749	
Discount Factor 1/[(1+r)^n]		$ 1.000	$ 0.870	$ 0.756	$ 0.658	$ 0.572	
Costs		$ 500,000.00					
Present Value		$ 500,000.00	$ -	$ -	$ -	$ -	**$ 500,000.00**
Benefits				$ 300,000.00	$ 300,000.00		
Present Value		$ -	$ -	$ 226,843.10	$ 197,254.87	$ -	**$ 424,097.97**
Discount Benefit-Cost		-$ 500,000.00	$ -	$ 226,843.10	$ 197,254.87	$ -	
Cumulative Return		-$ 500,000.00	-$ 500,000.00	-$ 273,156.90	-$ 75,902.03	-$ 75,902.03	
NPV	**-$ 75,902.03**						
ROI	**-15.18%**						
Payback	**Never**						

Practice NPV Solution

	Rate	10%					
	Year						
	0	1	2	3	4		Total
Costs	$ 300.00	$ 300.00	$ 300.00				
PV	$ 300.00	$ 272.73	$ 247.93	$ -	$ -		$ 820.66
Revenue			$ 250.00	$ 500.00	$ 500.00		
PV	$ -	$ -	$ 206.61	$ 375.66	$ 341.51		$ 923.78
Profit	-$ 300.00	-$ 272.73	-$ 41.32	$ 375.66	$ 341.51		$ 103.11
Cumulative	-$ 300.00	-$ 572.73	-$ 614.05	-$ 238.39	$ 103.11		
ROI	12.56%						
Payback	4 years						