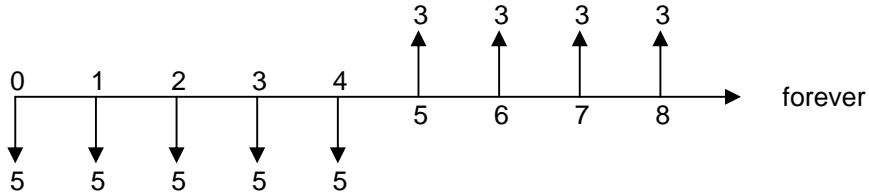


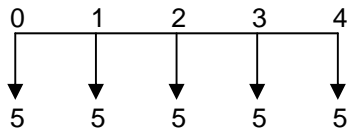
Present Value of a Dam
Notes on Solution

Annual construction cost 5,000,000 per year starting immediately
 Years to build: 5
 Annual benefits 3,000,000 per year starting after 5 years (eg, in year 5)
 Interest rate 5%

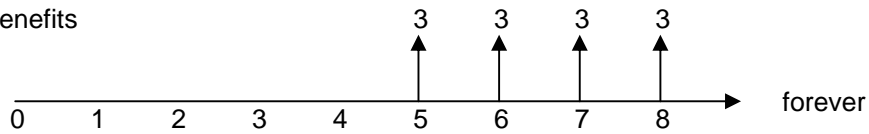


Decomposing into streams of costs and benefits:

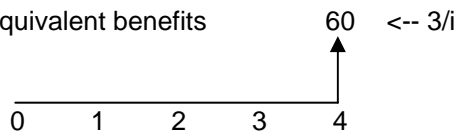
Costs



Benefits



Equivalent benefits



One approach: PV of net cash flows

yr	cost	benefit	net	
0	5	0	-5	-5.00
1	5	0	-5	-4.76
2	5	0	-5	-4.54
3	5	0	-5	-4.32
4	5	60	55	45.25

Total PV 26.6

Alternate approach: separate PV of construction and benefits

PV of construction costs

yr	cost	PV
0	5	5.0
1	5	4.8
2	5	4.5
3	5	4.3
4	5	4.1

PV of costs 22.7

PV of benefits

yr	benefit	
4	60	<-- PV of B/i in year 4

yr	benefit	
0	49	<-- Year 4 value brought back to year 0

PV of benefits 49.4

Net PV 26.6