Financial Evaluation of Competing IT Projects

QUESTION 1.

Project A: Cloud Infrastructure Upgrade

YEAR	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Cash Flow ($)	(150,000)	40,000	50,000	60,000	50,000	40,000	90,000
Discount Factor @10%	1	0.909	0.826	0.751	0.683	0.621	
Net Present Value(NPV)	(150,000)	36363.63	41322.31	45078.88	34150.67	24836.85	31752.32

Project B: Custom Software Development

YEAR	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Cash Flow ($)	(180,000)	30,000	40,000	70,000	80,000	60,000	100,000
Discount Factor @10%	1	0.909	0.826	0.751	0.683	0.621	
Net Present Value(NPV)	(180,000)	27272.72	33057.85	52592.03	54641.07	37255.27	24818.94

PROJECT A ROI =   NPV/ Initial Investment * 100
            =   31,752.34 / 150,000 * 100
          =   21.17%

Project B ROI   = $24,818.94 / $180,000 × 100
          =   13.79%

QUESTION 2

Project A: Enterprise Network Security Upgrade

Project	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Cost ($)	(500)	200	200	2000	400	500	2800
Discount factor (5%)	1	0.925	0.907	0.863	0.822	0.783	
Discounted cost	(500)	190.4	181.4	1726	328.8	391.5	2318.1
Benefit	4000	2000	5000	16,000	5000	6000	38,000
Discount Factor	1	0.925	0.907	0.863	0.822	0.783	
Discounted benefit	4000	1904	4535	13808	4110	4698	33055
Cash flow	4500	1713.6	4353.6	12082	3781.2	4306.5	30736.9
Cummulated cashflow	4500	5213.6	9567.2	21649.2	25430.4	30736.9	

Project B: Mobile App Development For Customer Engagement

Project	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Cost ($)	4000	2000	5000	6000	6000	6000	29000
Discount factor (5%)	1	0.925	0.907	0.863	0.822	0.783	
Discounted cost	4000	1904	4535	5178	4932	4698	25247
Benefit	6000	0	0	12,000	7000	8000	33,000
Discount Factor	1	0.925	0.907	0.863	0.822	0.783	
Discounted benefit	6000	0	0	10356	5754	6264	28274
Cash flow	2000	(1904)	(4535)	5178	822	1566	3127
Cummulated cashflow	2000	96	(4439)	739	1561	3127	

VI. <u>**Impact of 20% Reduction in Project B's Year 3 Benefits**</u>

- Original Year 3 Benefit: $12,000 → Discounted = $10,356
- Reduced by 20%: $9,600 → Discounted = $8,284.80

- Change in NPV:

NPV = 8,284.80 - 10,356 = -2,071.20

-New NPV for Project B:

  3,127 - 2,071.20 = $1,055.80

Conclusion:
- A 20% drop in Year 3 benefits reduces NPV by 66%, making Project B even less attractive.

#GREATNESS