Q1

- A project has an estimated life of 2 years.
- Revenue Estimates: Sales = 1,000 units/year Per Unit Price = $47 Per Unit Cost = $19
- Cost Estimates: Up-Front R &D for the project = $15,000
- Up-Front New Equipment = $7,500, Expected life of the new equipment is two years.
- Annual Overhead = $3,000
- Accounts receivables/payables is equal to 15% of sales/cost of goods sold
- Discount rate is 12% and tax rate is 20%.
- What is the NPV of the project?
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	Y0	Y1	Y2	Y3
NWC	0	15%x(28000)=4200	4200	0

	Y0	Y1	Y2	Y3
Sales		47000	47000	
COGS		19000	19000	
Gross profit		28000	28000	
(-)R&D upfront	15000			
(-)SGA		3000	3000	
(-)Dep		3750	3750	
EBIT	-15000	21250	21250	0
Tax (=0.2xEBIT)	-3000	4250	4250	0
Unlevered Net income	-12000	17000	17000	0
Plus: Dep		3750	3750	
Less: CapEx	7500			
Less: Increase of NWC	0	4200	0	-4200
FCF	-19500	16550	20750	4200

FCF =Unlevered NI +Dep-CapEx- Increase of NWC

NPV=-19500+16550/1.12+20750/1.12^2+4200/1.12^3=14808.02

Q2.1

- Assume all costs and expenses occur in the same year.

Vidia Inc. is a company that produces plant and machinery for use in the automotive sector. During the last year it generated net income of $69m and operating cash flows of $74m, paid dividends of $12m, bought $23m of property, plant and equipment to maintain the capital base, increased $14m of inventory and redeemed $10m of bonds. The after-tax cost of debt (after-tax interest) was $5m during the year.

- Vidia's change of net working capital (Δ**NWC**) is closest to:

Answer : 14m

Q2.2

Assume all costs and expenses occur in the same year.

Vidia Inc. is a company that produces plant and machinery for use in the automotive sector. During the last year it generated net income of \$69m and operating cash flows of \$74m, paid dividends of \$12m, bought \$23m of property, plant and equipment to maintain the capital base, increased \$14m of inventory and redeemed \$10m of bonds. The after-tax cost of debt was \$5m during the year.

Vidia's depreciation is closest to:

Net Income+Depreciation-ΔNWC is CFO (Operating cash flow)

- Answer: 74-69+14=19

Q2.3

- Assume all costs and expenses occur in the same year. Vidia Inc. is a company that produces plant and machinery for use in the automotive sector. During the last year it generated net income of \$69m and operating cash flows of \$74m, paid dividends of \$12m, bought \$23m of property, plant and equipment to maintain the capital base, increased \$14m of inventory and redeemed \$10m of bonds. The after-tax cost of debt (after-tax interest) was \$5m during the year.
- Vidia's free cash flow to the firm is closest to:

Answer : 74 (CFO) – 23 (CapEx) +5 (after-tax interest)
= 56m

Q3

Bay Properties is considering starting a commercial property. It has prepared the following 4-year forecast of free cash flow. Assume cash flow after 4 year will grow at 3% per year. What is the continuation value at year 4 and the value of today assuming the cost of capital of 14%.

	Year 1	Year 2	Year 3	Year 4
Free cash flow	-185,000	12,000	99,000	240,000

Continuation value at year 4: $\frac{240{,}000 \times (1+3\%)}{14\% - 3\%}$=2247272.727

Value today (present value): $\frac{-185000}{1.14} + \frac{12000}{1.14^2} + \frac{99000}{1.14^3} + \frac{240000+2247273}{1.14^4}$=1386440.21