Q1.
Foxglove Interiors has net fixed assets of $38,215, long-term debt of $22,400, cash of $560, accounts payable $4,611, inventory of $11,408, and accounts receivable of $3,462. **How much net working capital does the firm have?**

Current Asset			
Cash	560		
Inventory	11408		
Accounts receivable	3462		
Total Current Asset		15430	
(less) Current Liabilities			
Accounts payable	4611		
Total Current Liabilities		4611	
Net working capital			**10819**

Net working capital= current assets - current liabilities
Foxglove Interiors has a net working capital of $10819

Q2.
You just paid $525,000 for a security that will pay you and your heirs $25,000 a year forever. **What rate of return will you earn?**
PV=cashflow/IRR
525000=25000/IRR
525000*IRR=25000
IRR=25000/525000
IRR=0.047619…
IRR=4.76%
You would earn a rate of return of 4.76%

Q3.
A credit card compounds interest monthly and has an effective annual rate of 12.67 percent. **What is the annual percentage rate?**
$1 + EAR$ = (1 + APR/m)^m
1.1267=(1+(APR/12))^(12)
1.1267^(1/12)=(1+(APR/12))
1.009990661=(1+(APR/12))
0.009990661=APR/12
APR=0.1198879…
APR=11.99%
The annual percentage rate is 11.99%

Q4.
A project costing $6,200 initially should produce cash inflows of $2,860 a year for three years. The first cash inflow comes in Year 1. After the three years, the project will be shut down and will be sold at the end of Year 4 for an estimated net cash amount of $3,300. **What is the net present value of this project if the required rate of return is 11.3 percent?**

Year	Cashflow	Calculation	PV

0	(6200)		(6200)
1	2860	2680/(1+0.113)^1	2407.9066
2	2860	2680/(1+0.113)^2	2163.4381
3	2860	2680/(1+0.113)^3	1943.7898
4	3300	3300/(1+0.113)^4	2150.4695
NPV			**2465.604**

The net present value of this project is $2465.60

Q5.
During the year, Lasko's repaid $12,500 in long-term debt, borrowed $8,400, paid $611 in interest and $740 in dividends, and had an operating cash flow of $16,207. The firm acquired $33,500 in new fixed assets and sold $8,400 of old assets. Net working capital declined by $1,592 during the year. **What is the annual cash flow to stockholders**?

CFFA = CF (to creditors) + CF (to stockholders)
OCF-NCS- (Change in NWC) = (CF to creditors) + (CF to stockholders)

A) OCF= EBIT+DEP-TAX [income account]
operating cash flow of $16,207=**16,207**

B) NCS=((Fixed assets purchased)-(fixed asset sales)) [cost account]
(33500-8400)=**25100**

C) Change in NWC= current year NWC - Last year NWC [cost account]
Net working capital declined by $1,592 during the year= **-1592**

D) CF to creditors=InterestPaid-(New Debt -Debt retired)
611-(8400-12500)=**4711**

E) CF to stockholders
16,207-25100-(-1592)=4711+ (CF to stockholders)
-7301=4711+ (CF to stockholders)
(CF to stockholders)=-12012
The annual cash flow to stockholders is - $12012

Q6.
An investment project has an initial cost of $382, and cash flows $105, $130, $150, and $150 for Years 1 to 4, respectively. The cost of capital is 9 percent. **What is the discounted payback period?**

Year	Cashflow	Calculation cashflow/(1.09)^year	Balance
0	(382)		(382)
1	105	96.3302752293578	-285.669724770642
2	130	109.418399124653	-176.251325645989
3	150	115.82752200916	-60.4238036368298

4	150	106.263781659779	45.8399780229497

= 3 + (60.42/106.26)
=3 + 0.5686..
=3.57
The discounted payback period is 3.57 years

Q7.
The Lo Sun Corporation offers a bond with a current market price of $1,029.75, a coupon rate of 8 percent, and a yield to maturity of 7.52 percent. The face value is $1,000. Interest is paid semiannually. **How many years is it until this bond matures?**

– Face Value: $1000
– Coupon rate: $40 ((8%*1000)/2)
– Coupon frequency: semi-annual
– Yield to maturity: 3.76% (7.52/2)
–Current market price: $1,029.75

BondValue= (C/YTM)[1-(1/(1+YTM)^n)]+(face/(1+YTM)^n)
1,029.75= (40/0.0376)[1-(1/(1+0.0376)^n)]+(1000 /(1+0.0376)^n)
1,029.75= (1063.8298)[1-(1/(1.0376)^n)]+(1000 /(1.0376)^n)

Market price	N	Result	working
1042.73746835377	30 PERIODS	TOO HIGH	(1063.8298)×(1−(1÷(1.0376)^30))+(1000 ÷(1.0376)^30)
1041.12150551918	28 PERIODS	TOO HIGH	(1063.8298)×(1−(1÷(1.0376)^28))+(1000 ÷(1.0376)^28)
1037.50867971798	24 PERIODS	TOO HIGH	(1063.8298)×(1−(1÷(1.0376)^24))+(1000 ÷(1.0376)^24)
1033.32106349027	20 PERIODS	TOO HIGH	(1063.8298)×(1−(1÷(1.0376)^20))+(1000 ÷(1.0376)^20)
1028.46720929539	16 PERIODS	TOO LOW	(1063.8298)×(1−(1÷(1.0376)^16))+(1000 ÷(1.0376)^16)
1029.74866015362	17 PERIODS	CORRECT	(1063.8298)×(1−(1÷(1.0376)^17))+(1000 ÷(1.0376)^17)

Semi annual to year
17/2=8.5 years
It will take 8.5 years for the bond to mature

Q8.
The Mill Wheel is considering a project with a life of 3 years that will require $289,400 for fixed assets, $36,700 for inventory, and $27,800 for accounts receivable. The short-term debt for this project is $16,500. The fixed assets will be depreciated straight-line to a zero book value over 5 years. At the end of the project in Year 3, the fixed assets can be sold for 20 percent of their original cost. In this project, all relevant items for the net working capital will incur in Year 0 and return to zero at the end of the project in Year 3. The project is expected to generate annual sales of $275,000 and costs of $198,000. The tax rate is 21 percent and the required rate of return is 16 percent. What is the amount of the cash flow in the project's final year? [5 marks]

– Initial Investment = $289,400
– Inventory = $36,700
– Accounts Receivable = $27,800
– short-term debt = $16,500
– Annual depreciation = $57880 (289,400/5 years)
–Asset sold at end of year 3 = $57880 (289,400*0.2)
– annual sales = $275,000
– annual cost = $198,000
– tax rate is 21 percent
–rate of return is 16 percent.

Net Capital Spending

Year	0	1	2	3
NCS	(289,400)			
Depreciation		57880	57880	57880
Book Value	289,400	231520	173640	115760

Note asset is sold in year 3 for $57880
Salvage Value
(bookprice - sales price) * (tax%)
115760-57880=57880
57880*0.21=12154.8
Salvage value = $70034.8

Project Cash flow = OCF-NCS-(Change in NWC)
OCF= EBT+DEP-TAX
=(Sales-COGS-SGA)*(1-tax)+DEP*tax
=(275000-198000)*(0.79)+57880*0.21
=72984.8

Year	0	1	2	3
Sales		275,000	275,000	275,000
COGS+SGA		198,000	198,000	198,000

Depreciation		57880	57880	57880
OCF		72984.8	72984.8	72984.8

ΔNWC = (CA current – CA previous) – (CL current– CL previous)
= ΔCA - ΔCL
CA= inventory + accounts receivable
CA= 36,700+27,800
CL= short-term debt
CL=16,500
NWC = 36,700+27,800 - 16,500
NWC= 48000
-Assuming full NWC recovery

NWC	0	1	2	3
NWC	48000	48000	48000	48000
Change in NWC	-48000	0	0	48000

Year	0	1	2	3
NCS	-289,400			70034.8
OCF		72984.8	72984.8	72984.8
(Change in NWC)	-48000	0	0	48000
CFFA	-337400	72984.8	72984.8	**191019.6**

NPV of CFFA= -337400 + (72984.8/1.16^1) + (72984.8/1.16^2) + (191019.6/1.16^3)
NPV of CFFA= -97864.30

The cashflow in the project's final year is $191019.6