Q2. PP & E = 450000 + 50000 = 500,000

WC = 120,000

CFO = 500k + 120k = 620,000

Depreciation = 500k/5 = 100,000 (CF_{1-5} operating)

CF1 = (300,000 − 110,000) × (0.6) + (100,000)(0.4) = 154,000 (CF_{1-5} operating)

CF5 = 154k + 120k + 100,000 × 0.6 = 334,000

Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
620k	154k	154k	154k	154k	334k

CF_5 non operating: equipment sold for 100k, CF after tax for equipment = 60,000

∴ CF_5 non op = 180,000

⇒ NPV (10%, Σ154k + 334k) = 75547

Q1. $$CF_0 = \sum_{t=1}^{n} \frac{CF_t}{(1+IRR)^t}$$

$$CF_0 = 75000\left[\sum_{t=1}^{10} \frac{1}{(1.11)^t}\right] + 100{,}000\left[\sum_{t=11}^{20} \frac{1}{(1.11)^t}\right]$$

$$= 648{,}875$$

NPV at 9% will be present value of CF_5 − 648,875

$$= 75000 \sum_{t=1}^{10} \frac{1}{(1.09)^t} + \sum_{t=11}^{20} \frac{100000}{(1.09)^t} - CF_0$$

$$= 750186 - 648875$$

$$= 101311$$