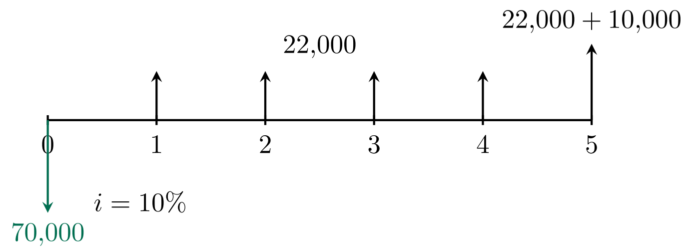
In-Class Activity 15

Name: ______________________________ **ID:** __________________ **Section:** ________

(25 points) *Najd Copper* must dewater its copper concentrate before rail shipment. An **automated filter press** costs **70,000 SAR** today, cuts net moisture-penalty and labor costs by **22,000 SAR per year** for **5 years**, and can be resold for **10,000 SAR** at the end of year 5. The firm's MARR is **10%** per year.



(a) (10 pts) Compute the NPW of buying and operating the press at the MARR!

(b) (15 pts) The plant manager wants the decision in **per-year** terms, because a vendor offers to run the same dewatering **as a service** for **18,000 SAR per year** (Najd Copper keeps the 22,000 SAR/yr savings either way).

(a) (10 points) Find the **capital recovery cost** $CR(10\%)$ — the annual cost of *owning* the press. Should the firm **own** the press or **outsource** to the vendor?

(b) (5 pts) Show that the press's **annual equivalent** carries the **same sign** as your NPW in part (a). Why must that be true?