

Problem 13-23 (15 minutes)

<i>Item</i>	<i>Year(s)</i>	<i>Amount of Cash Flows</i>	<i>14% Factor</i>	<i>Present Value of Cash Flows</i>
Cost of equipment required	Now	\$(850,000)	1.000	\$(850,000)
Working capital required	Now	\$(100,000)	1.000	(100,000)
Net annual cash receipts	1-5	\$230,000	3.433	789,590
Cost of road repairs	3	\$(60,000)	0.675	(40,500)
Salvage value of equipment.....	5	\$200,000	0.519	103,800
Working capital released	5	\$100,000	0.519	<u>51,900</u>
Net present value				<u>\$ (45,210)</u>

No, the project should not be accepted; it has a negative net present value. This means that the rate of return on the investment is less than the company's required rate of return of 14%.

Problem 13-24 (20 minutes)

<i>Items and Computations</i>	<i>Year(s)</i>	<i>(1) Amount</i>	<i>(2) Tax Effect</i>	<i>(1) × (2) After-Tax Cash Flows</i>	<i>12% Factor</i>	<i>Present Value of Cash Flows</i>
Investment in new trucks	Now	\$(450,000)		\$(450,000)	1.000	\$(450,000)
Salvage from sale of the old trucks ...	Now	\$30,000		\$30,000	1.000	30,000
Net annual cash receipts	1-8	\$108,000	1 – 0.30	\$75,600	4.968	375,581
Overhaul of motors	5	\$(45,000)	1 – 0.30	\$(31,500)	0.567	(17,861)
Salvage from the new trucks	8	\$20,000		\$20,000	0.404	8,080

CCA tax shield:

$$PV = \frac{Cdt}{d+k} \times \frac{1 - \frac{1}{1+k}^n}{1+k} - \frac{Sdt}{d+k} \times \frac{1 - \frac{1}{1+k}^n}{1+k}$$

$$\frac{(450,000 - 30,000) \times .3 \times .3 \times 1.06}{.3 + .12} - \frac{20,000 \times .3 \times .3 \times .404}{1.12 \times .3 + .12}$$

$$= (\$90,000 \times .9464) - (\$4,285.71 \times .404) = \$83,445$$

Net present value	<u>\$ 29,245</u>
-------------------------	------------------

Since the project has a positive net present value, the contract should be accepted.

