Exercise 14-13 (30 minutes)

1. $$\text{Factor of the internal rate of return} = \frac{\text{Investment required}}{\text{Annual net cash inflow}}$$

$$= \frac{\$130{,}400}{\$25{,}000} = 5.216$$

Looking in Exhibit 14B-2 and scanning along the 10-period line, a factor of 5.216 represents an internal rate of return of 14%.

2.

Item	*Year(s)*	*Amount of Cash Flows*	*14% Factor*	*Present Value of Cash Flows*
Initial investment.....	Now	$(130,400)	1.000	$(130,400)
Annual net cash inflows...	1-10	$25,000	5.216	130,400
Net present value				$ 0

The reason for the zero net present value is that 14% (the discount rate we have used) represents the machine's internal rate of return. The internal rate of return is the discount rate that results in a zero net present value.

3. $$\text{Factor of the internal rate of return} = \frac{\text{Investment required}}{\text{Annual net cash inflow}}$$

$$= \frac{\$130{,}400}{\$22{,}500} = 5.796 \text{ (rounded)}$$

Looking in Exhibit 14B-2 and scanning along the 10-period line, a factor of 5.796 falls closest to the factor for 11%. Thus, to the nearest whole percent, the internal rate of return is 11%.