LG 3 **P10–6 NPV for varying costs of capital** Dane Cosmetics is evaluating a new fragrance-mixing machine. The machine requires an initial investment of $24,000 and will generate after-tax cash inflows of $5,000 per year for 8 years. For each of the costs of capital listed, (1) calculate the *net present value (NPV)*, (2) indicate whether to accept or reject the machine, and (3) explain your decision.

a. The cost of capital is 10%.
b. The cost of capital is 12%.
c. The cost of capital is 14%.

LG 3 **P10–7 Net present value: Independent projects** Using a 14% cost of capital, calculate the *net present value* for each of the independent projects shown in the following table, and indicate whether each is acceptable.

	Project A	Project B	Project C	Project D	Project E
Initial investment (CF_0)	$26,000	$500,000	$170,000	$950,000	$80,000
Year (t)	Cash inflows (CF_t)				
1	$4,000	$100,000	$20,000	$230,000	$ 0
2	4,000	120,000	19,000	230,000	0
3	4,000	140,000	18,000	230,000	0
4	4,000	160,000	17,000	230,000	20,000
5	4,000	180,000	16,000	230,000	30,000
6	4,000	200,000	15,000	230,000	0
7	4,000		14,000	230,000	50,000
8	4,000		13,000	230,000	60,000
9	4,000		12,000		70,000
10	4,000		11,000		

LG 3 **P10–8 NPV** Simes Innovations, Inc., is negotiating to purchase exclusive rights to manufacture and market a solar-powered toy car. The car's inventor has offered Simes the choice of either a one-time payment of $1,500,000 today or a series of five year-end payments of $385,000.

a. If Simes has a cost of capital of 9%, which form of payment should it choose?
b. What yearly payment would make the two offers identical in value at a cost of capital of 9%?
c. Would your answer to part a of this problem be different if the yearly payments were made at the beginning of each year? Show what difference, if any, that change in timing would make to the present value calculation.
d. The after-tax cash inflows associated with this purchase are projected to amount to $250,000 per year for 15 years. Will this factor change the firm's decision about how to fund the initial investment?

LG 3 **P10–9 NPV and maximum return** A firm can purchase new equipment for a $150,000 initial investment. The equipment generates an annual after-tax cash inflow of $44,400 for 4 years.

a. Determine the *net present value (NPV)* of the equipment, assuming that the firm has a 10% cost of capital. Is the project acceptable?
b. If the firm's cost of capital is lower than 10%, does the investment in equipment become more or less desirable? What is the highest cost of capital (closest whole-percentage rate) that the firm can have and still find that purchasing the equipment is worthwhile? Discuss this finding in light of your response in part a.