

Section 8.3

Home Appliance Company In Exercises 13–16, assume that you are the owner of a home appliance company.

- You take out a \$500,000 fire insurance policy on your factory. The annual premium is \$2750. The probability of a fire is 0.005. What is the expected value?
- You take out a \$250,000 flood insurance policy on your factory. The annual premium is \$3770. The probability of a flood is 0.014. What is the expected value?
- Your company is considering developing one of two toaster models. Use a decision tree to decide which model your company should develop.

Toaster A: Cost of development: \$500,000

Toaster B: Cost of development: \$750,000

Projected Sales	
Probability	Net sales (in thousands)
25%	\$1000
65%	\$600
10%	\$250

Projected Sales	
Probability	Net sales (in thousands)
30%	\$1200
55%	\$800
15%	\$500



- Your company is considering developing one of two microwave models. Use a decision tree to decide which model your company should develop.

Microwave A: Cost of development: \$1,000,000

Microwave B: Cost of development: \$900,000

Projected Sales	
Probability	Net sales (in thousands)
20%	\$1600
65%	\$1400
15%	\$800

Projected Sales	
Probability	Net sales (in thousands)
35%	\$1500
45%	\$1300
20%	\$750



	Probability	Gain
Option 1	100%	\$1000
	0%	\$0
Option 2	50%	\$500
	50%	\$2000

- Option Comparison** Compare the two options.

- Investment Comparison** You want to invest \$1000. Find the expected values for the two investments.

Speculative investment

- Complete loss: 30% chance
- No gain or loss: 25% chance
- 100% gain: 25% chance
- 200% gain: 15% chance
- 500% gain: 5% chance

Conservative investment

- Complete loss: 5% chance
- No gain or loss: 30% chance
- 25% gain: 60% chance
- 50% gain: 5% chance