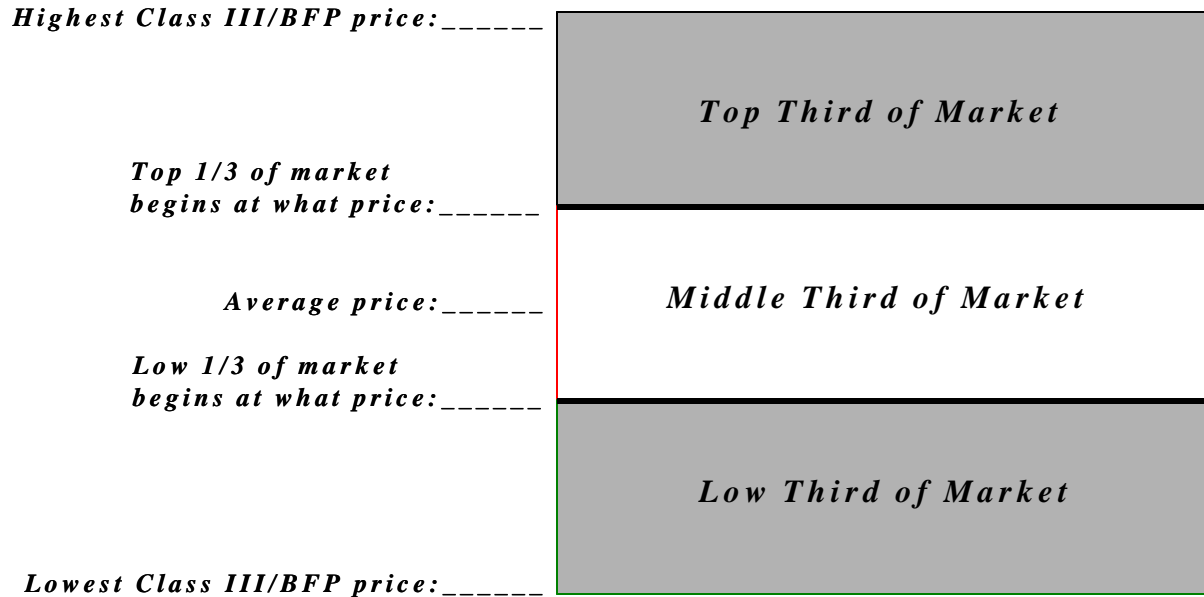


*Participant
Packet
B*

Probability Exercises 1-3

Exercise 1:



Based on the years 1988 to the current time, record below what you believe is the correct answer.

Exercise 2

Based on the same time period, record below what percent of the time each price you estimated in exercise 1 occurred, e.g., what percent of the time did the top 1/3 price occur. As you consider your answers you may want to think of a 25 cent range of prices with your answers to exercise 1 as the midpoint of that range. For example if your top 1/3 price was \$11.00 then answer below what percent of the time you think the 25 cent price range from \$10.88 to \$11.13 occurred.

Based on your answers in exercise 1, what percent of the time did the 25 cent range around your:

Shighest price estimate occur _____ % of the time

Stop 1/3 price estimate occur _____ % of the time

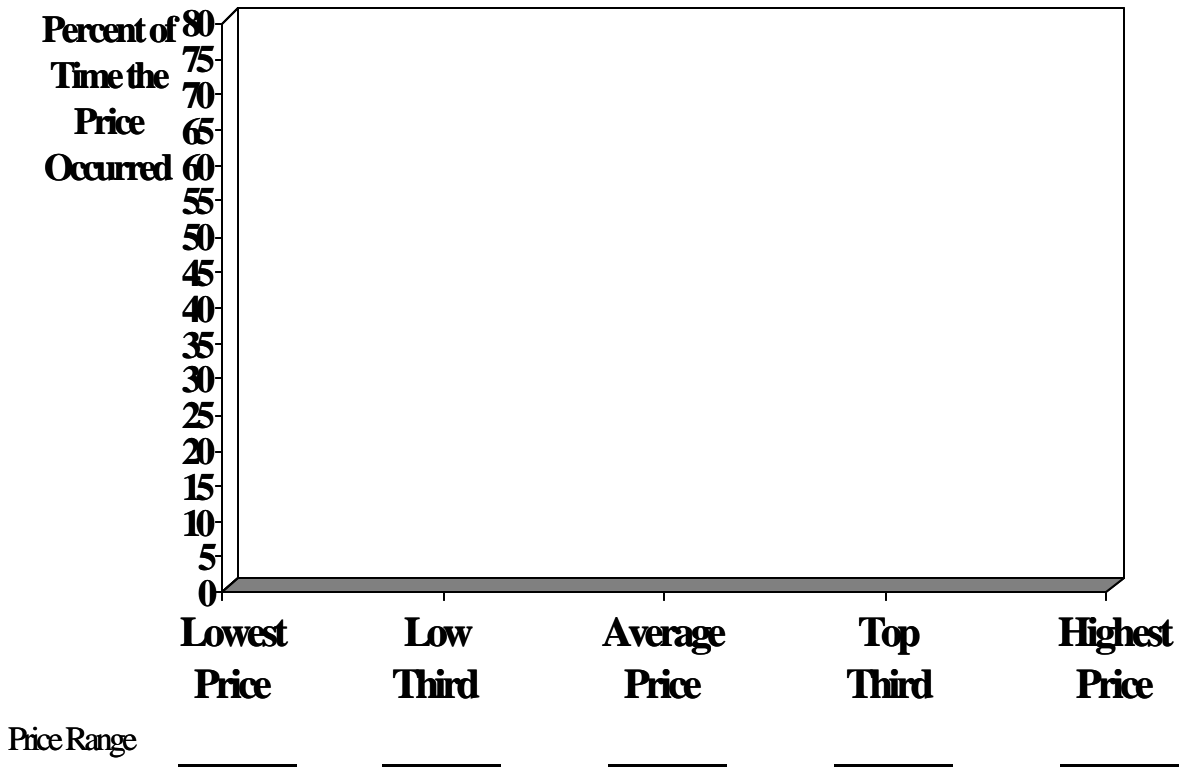
Saverage price estimate occur _____ % of the time

Slow 1/3 price estimate occur _____ % of the time

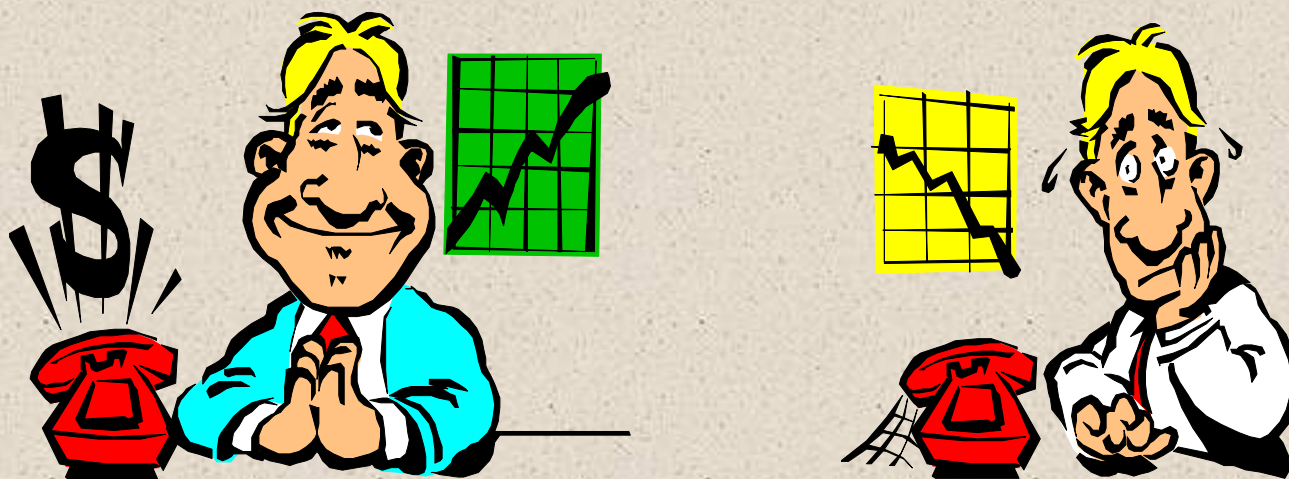
Slowest price estimate occur _____ % of the time

Exercise 3

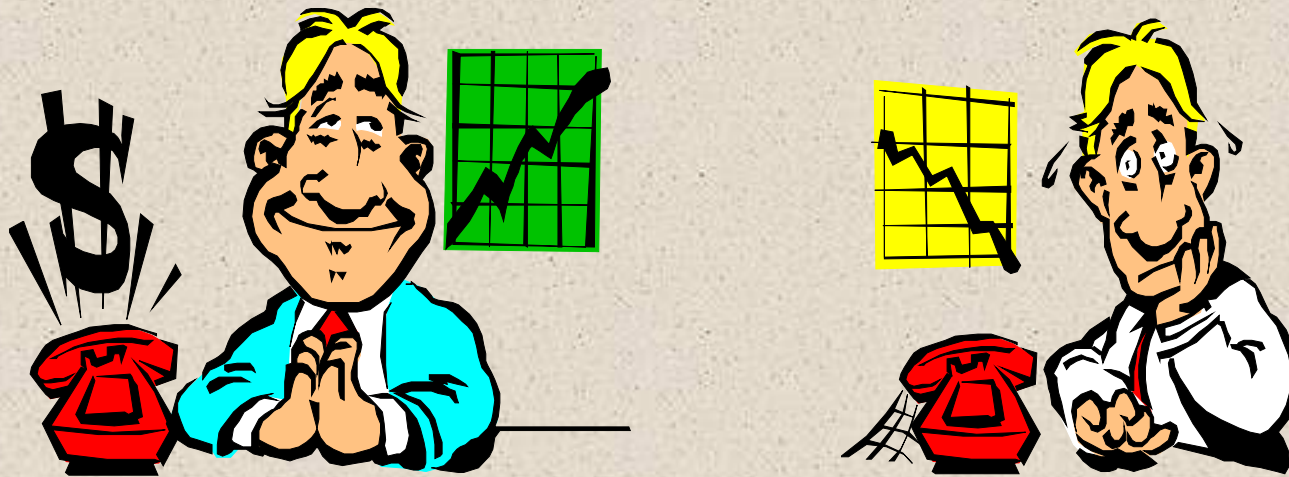
Bring your answers to exercises 1 and 2 together in the graph below. Record the lowest, low third, etc. prices you estimated from exercise 1 on the appropriate lines at the bottom of the graph. Next, follow the graph straight up from the lowest price estimate, and record the percent of time the lowest price occurred (exercise 2) by putting a dot at the appropriate percentage level. Do the same for the other price estimates and connect the dots.



What is Risk and Risk Management

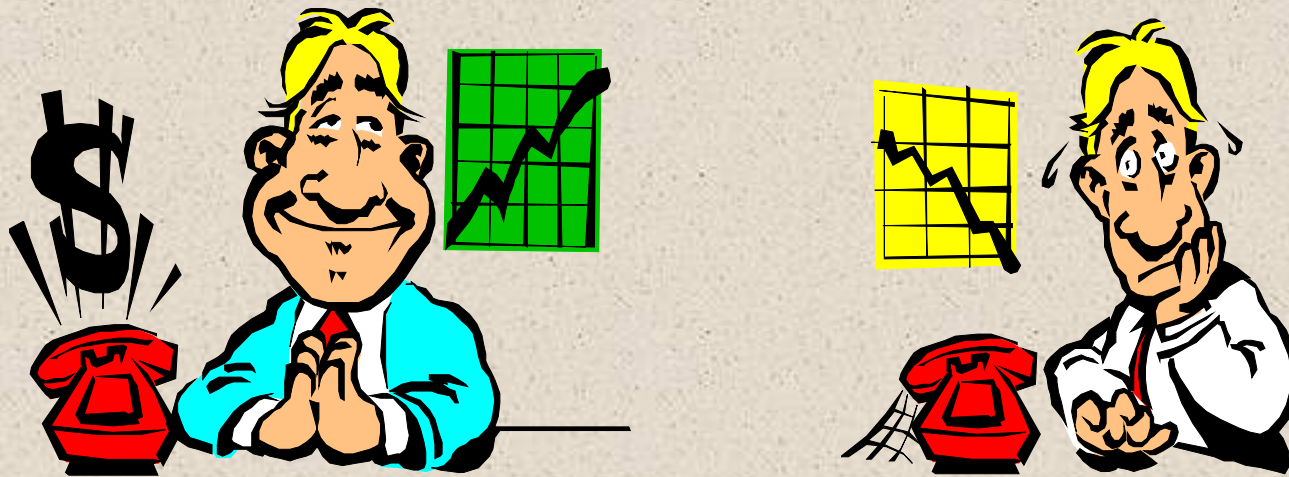


What is Risk



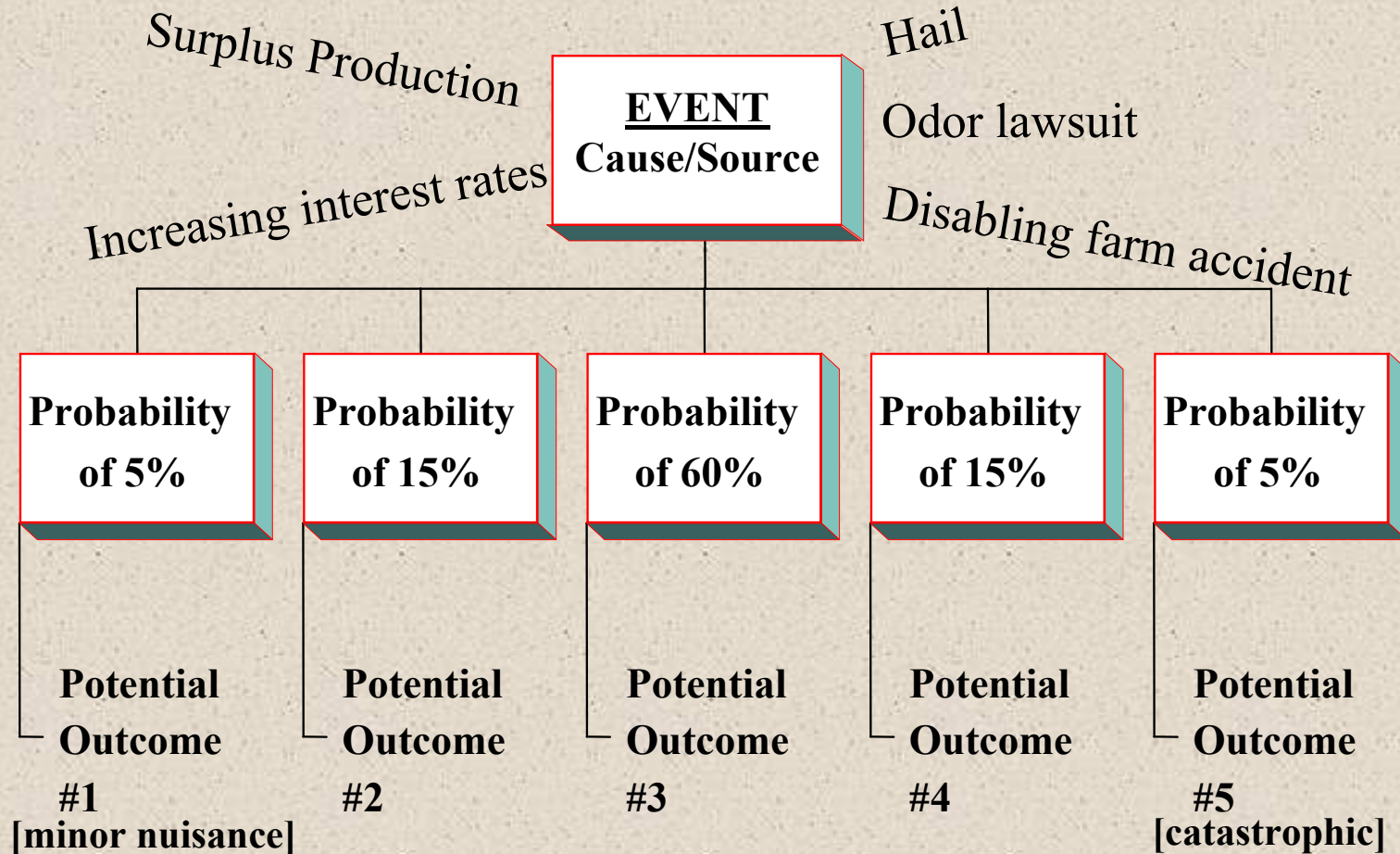
Risk exists if there is something you don't want to happen – having a chance to happen!!!

What is Risk – Take 2



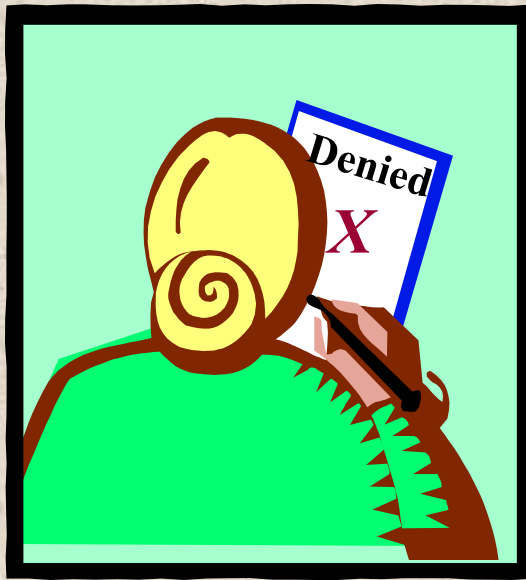
The probability that some event will cause an undesirable outcome on the financial health of your business and/or other business/family goals

Components of Risk



Components of Risk – Undesirable Outcome

Put simply, the Undesirable Outcome is what hurts!

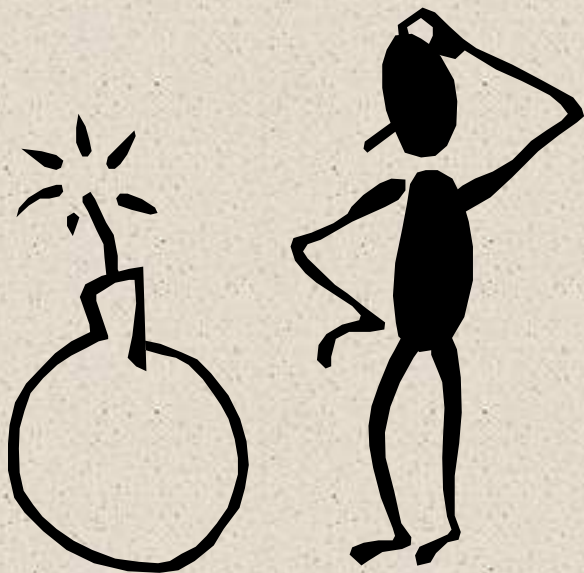


- lower than expected production
- catastrophically lower production
- inability to meet cash flow
- loss of income
- catastrophic loss of income
- loss of life
- loss of buildings & other resources
- loss of health
- inability to get a permit or loan

Components of Risk – Event (Cause/Source of Risk)

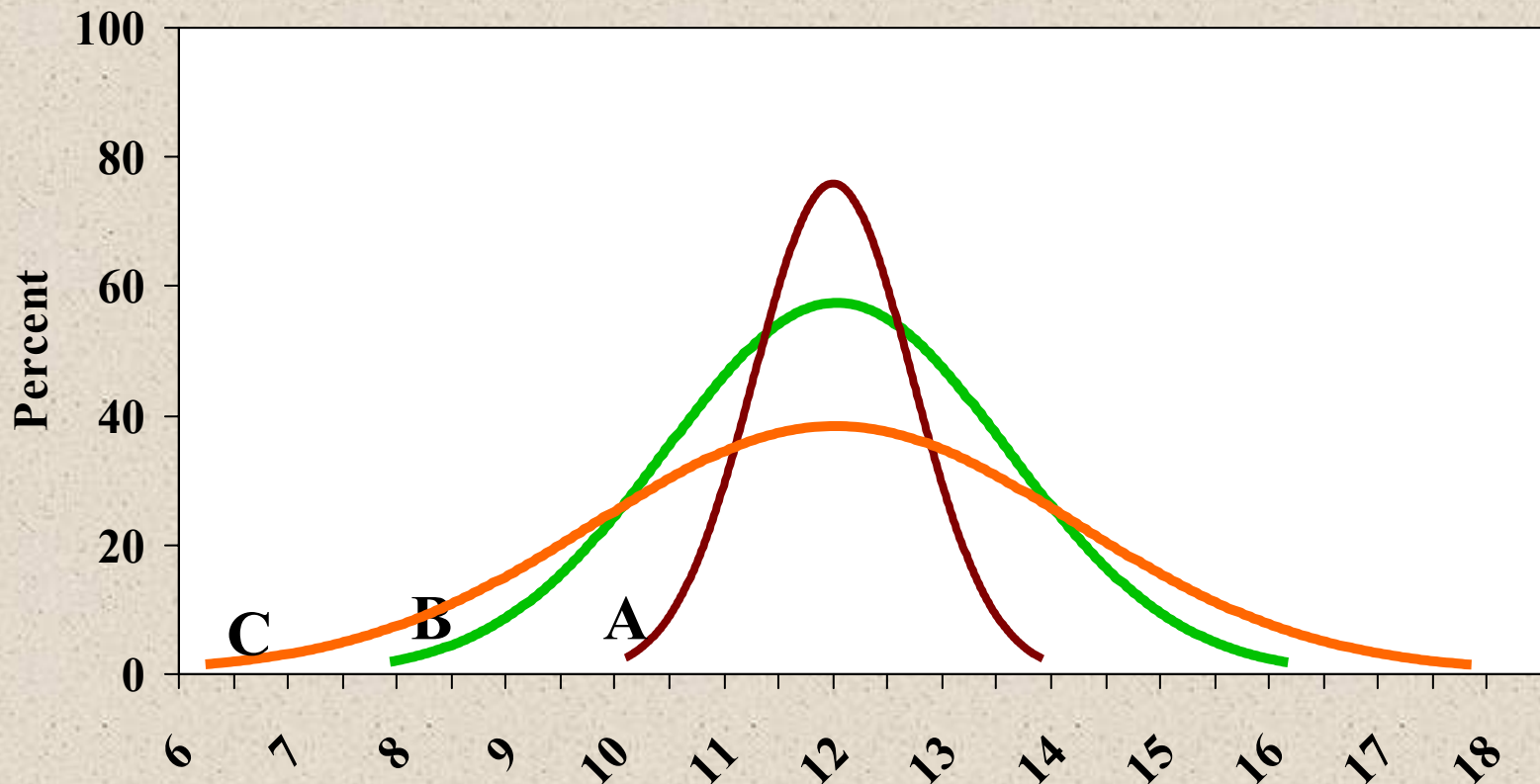
The Event is what caused the hurt:

- weather event
- injury/death of an employee
- neighbors action against you
- surplus production of milk
- widespread poor grain production
- low quality inputs
- divorce or disagreement
- downward slide in general economy
- and countless more!!!



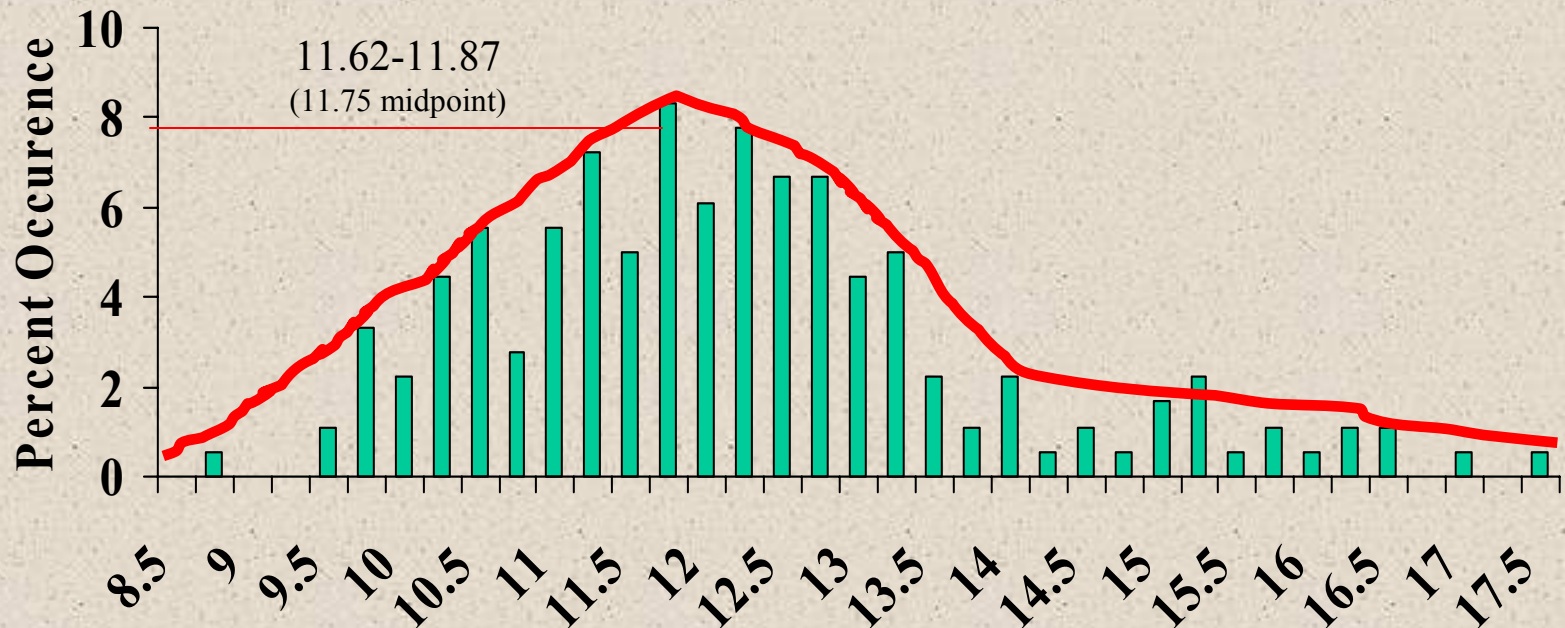
Components of Risk – Probability

Probability is a measure of the likelihood that the Risk Event will occur, e.g., 30% chance of rain



Back to the Beginning Exercise

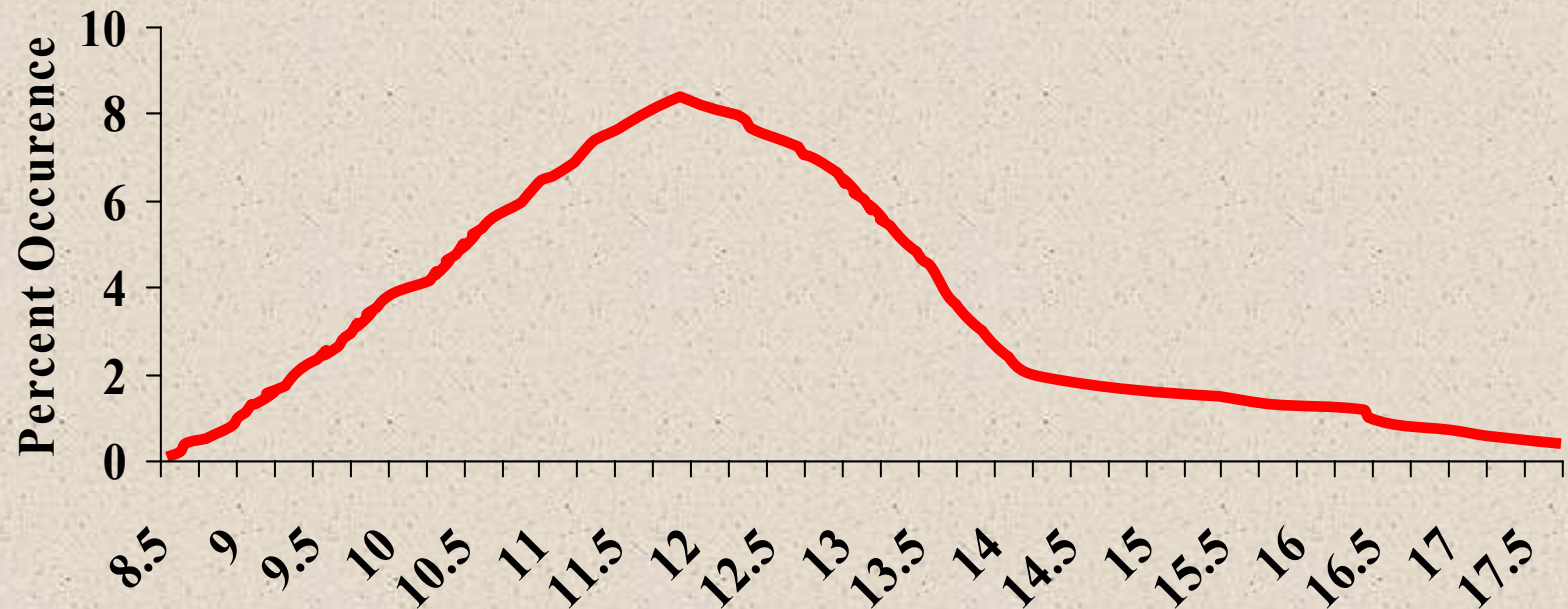
Probability Distribution



25 Cent Range, Midpoints Are Shown (based on 1988-Dec. 2002)

Back to the Beginning Exercise

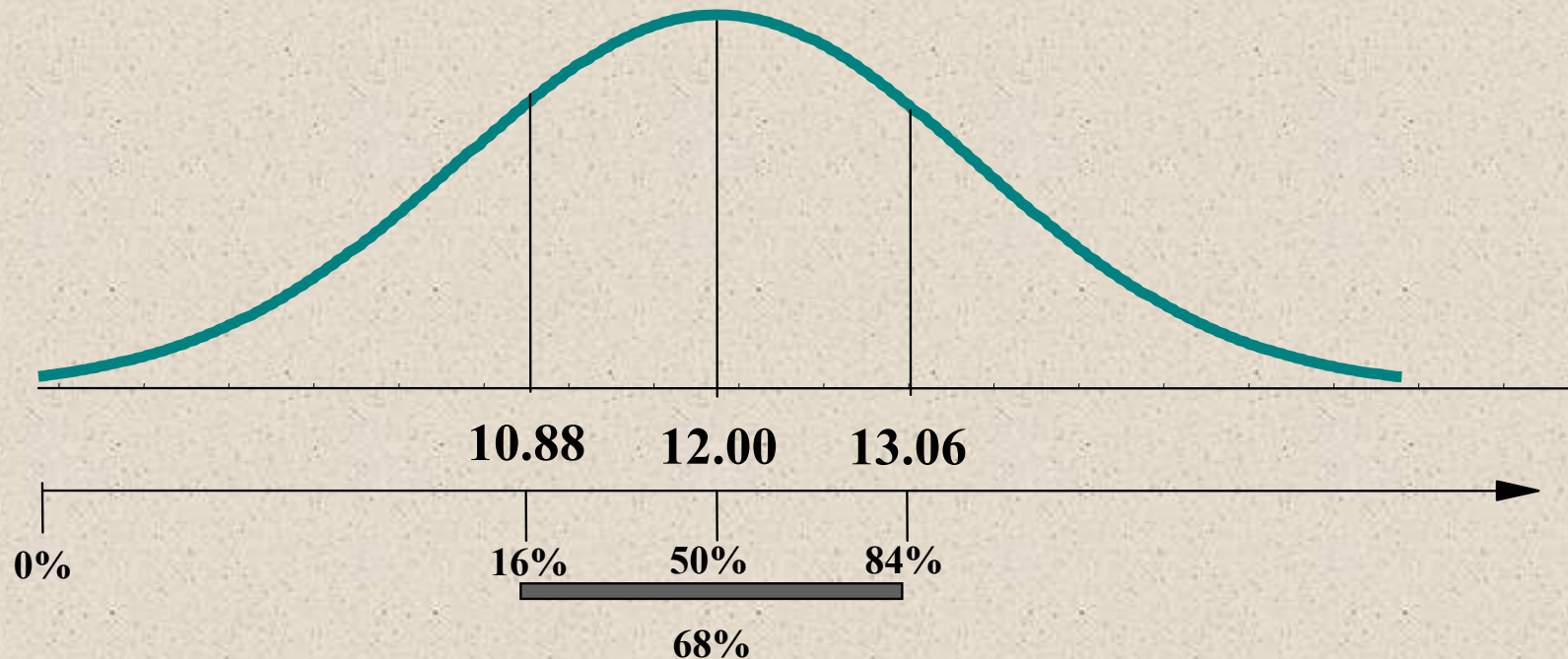
Probability Distribution



25 Cent Range, Midpoints Are Shown

Back To The Beginning Exercise

[Class III/BFP Prices, 1988-December 2002]



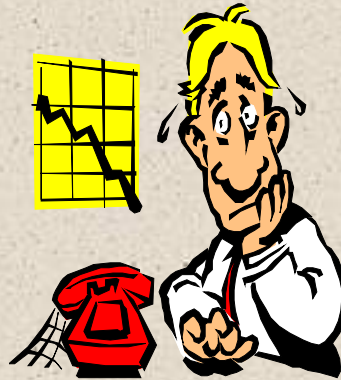
Top Third = \$12.25

Bottom Third = \$11.81

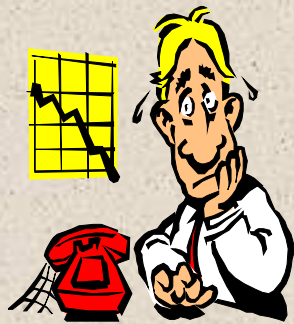
Overall Categories of Risk



Risk Increases the More You Don't Know



All The Potential Outcomes
The Probability of Occurrence
Cost of a Undesirable Outcome



Said Another Way:

The more you do know and understand about

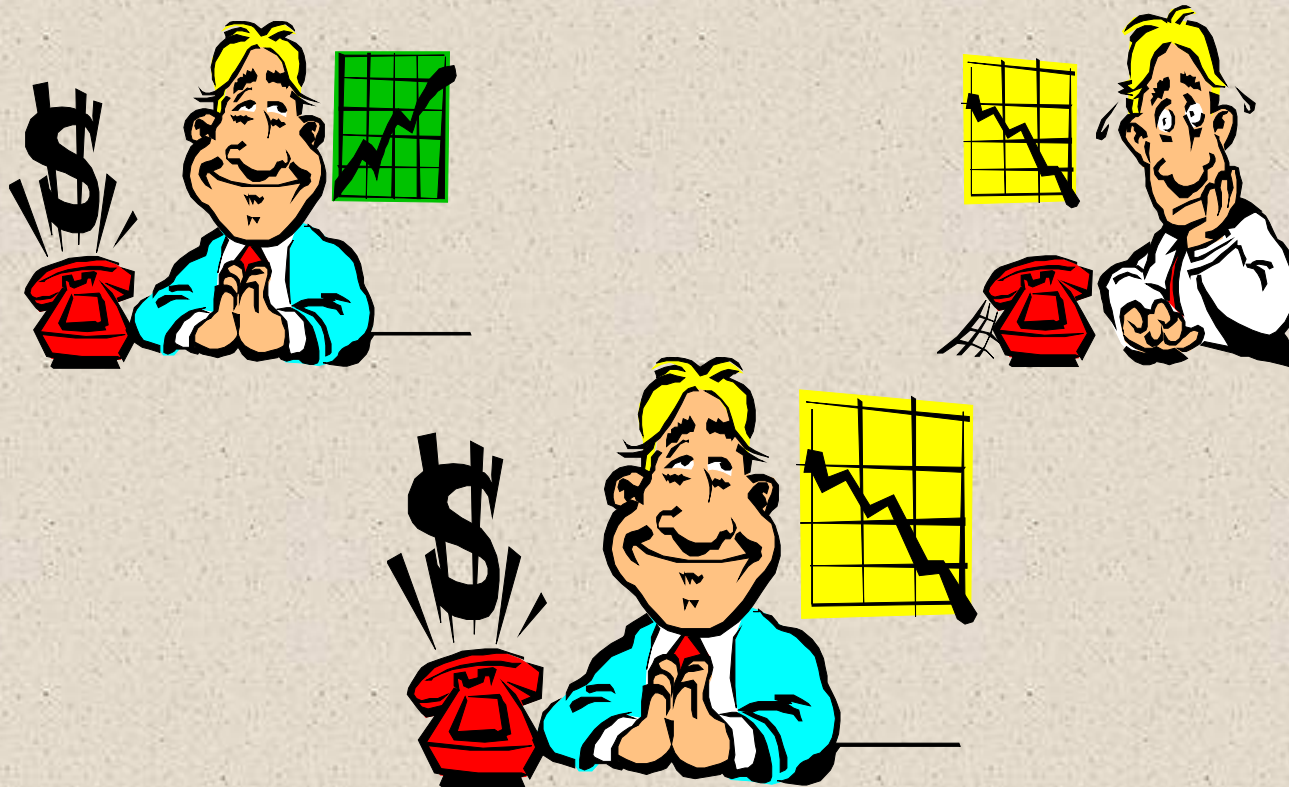
All The Potential Outcomes

The Probability of Each Outcome Occurring

Cost of Undesirable Outcomes

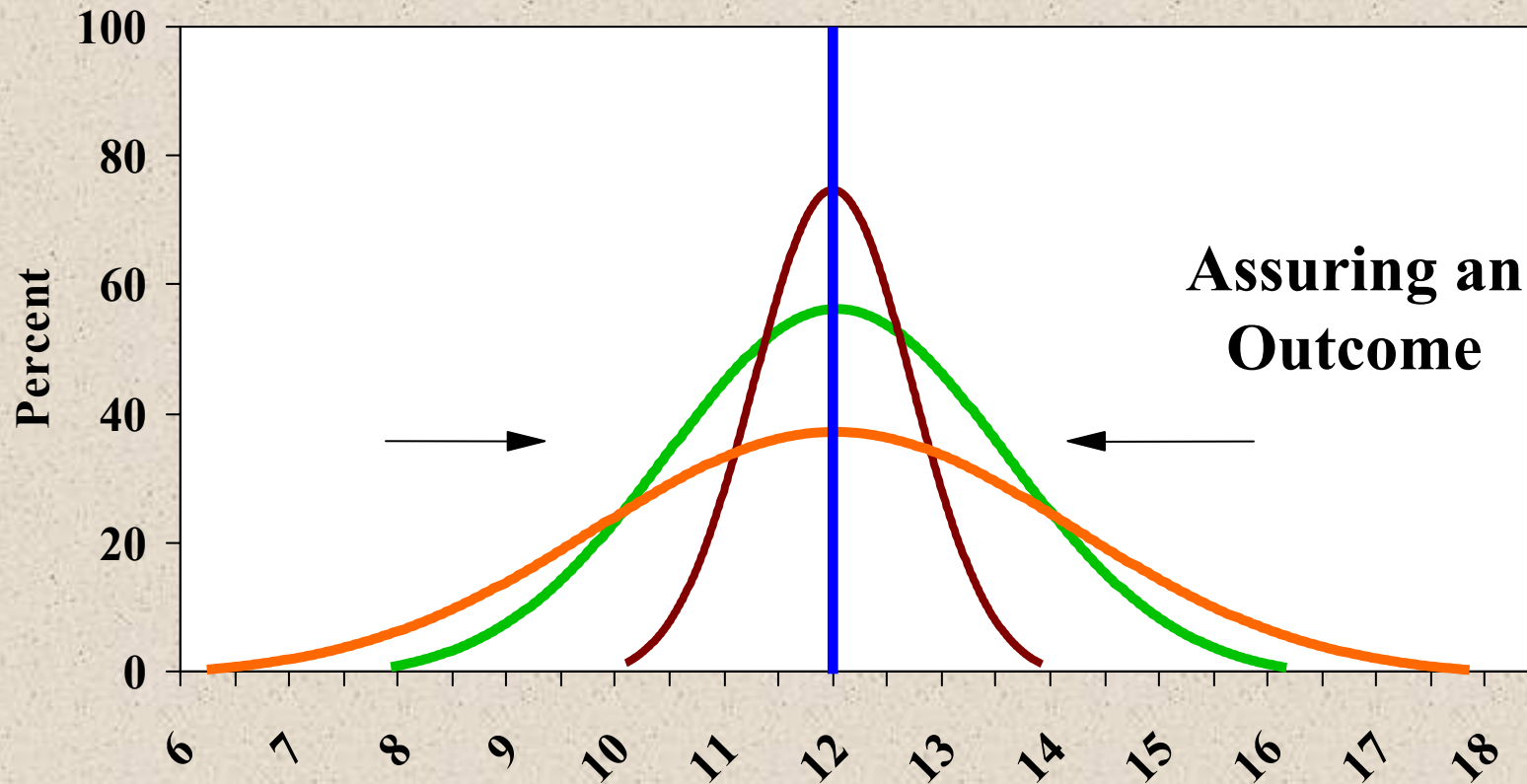
the better long term risk manager you will be.

What is Risk Management?



Assuring An Outcome

Risk Management is Assuring An Outcome



Five Primary Means of Risk Management

Reduce

1. Reduce the probability that the event will occur
2. Reduce the impact if the event does occur

Transfer

3. Transfer the cost of an undesirable outcome to someone else

Avoid

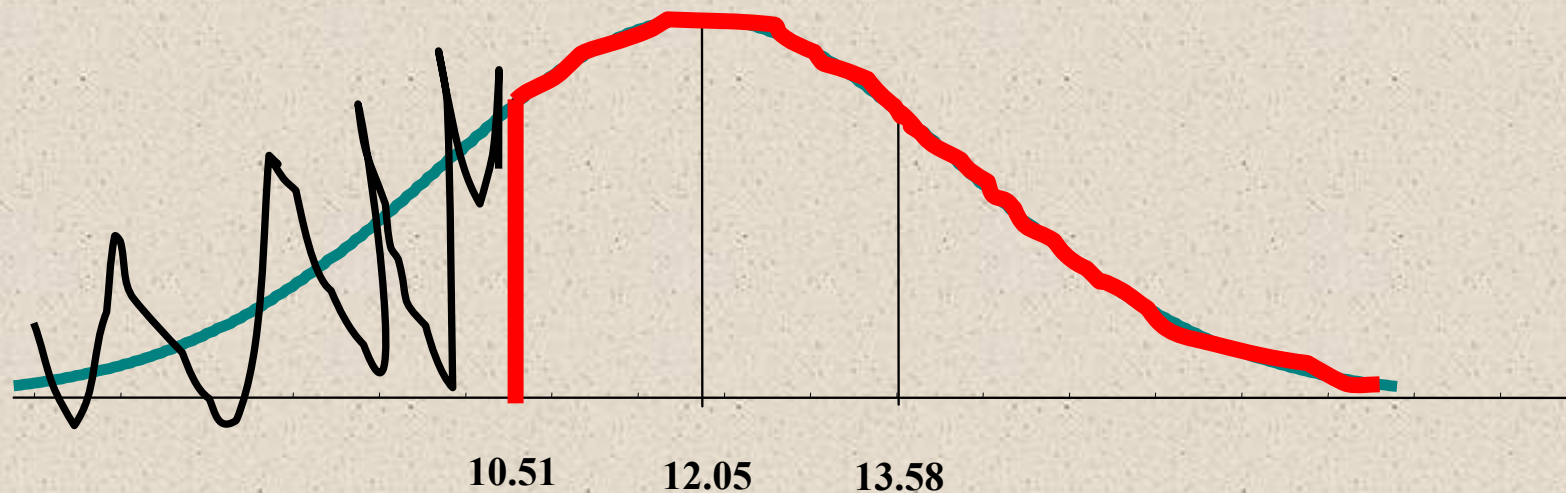
4. Completely avoid potential events thus providing a zero probability that they will occur

Do Nothing

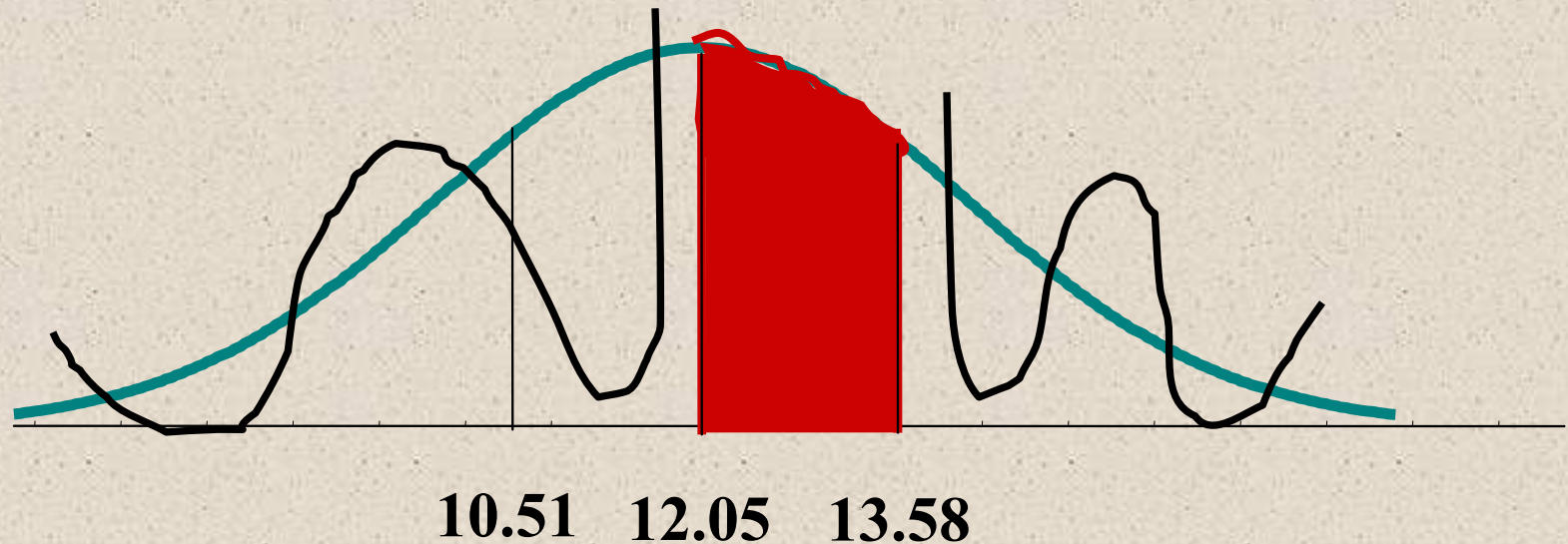
5. Let the risk happen and be ready to bear the consequences.

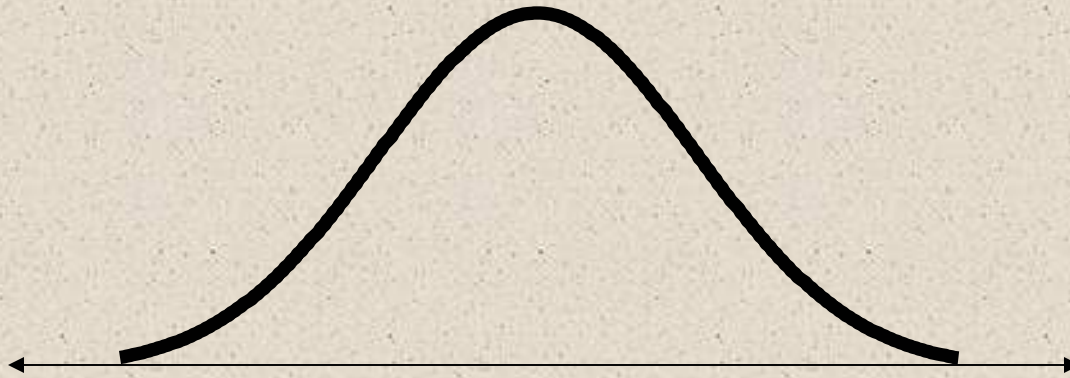
Price Risk

What Happens to the Distribution When You Have a Floor Price at \$10.51?



What Happens to the Distribution When You Establish a Short Fence from \$12.05 to 13.58?





Level of Production

Employee Performance

Interest Rates

Personal Injury/Death (you, employee, spouse)

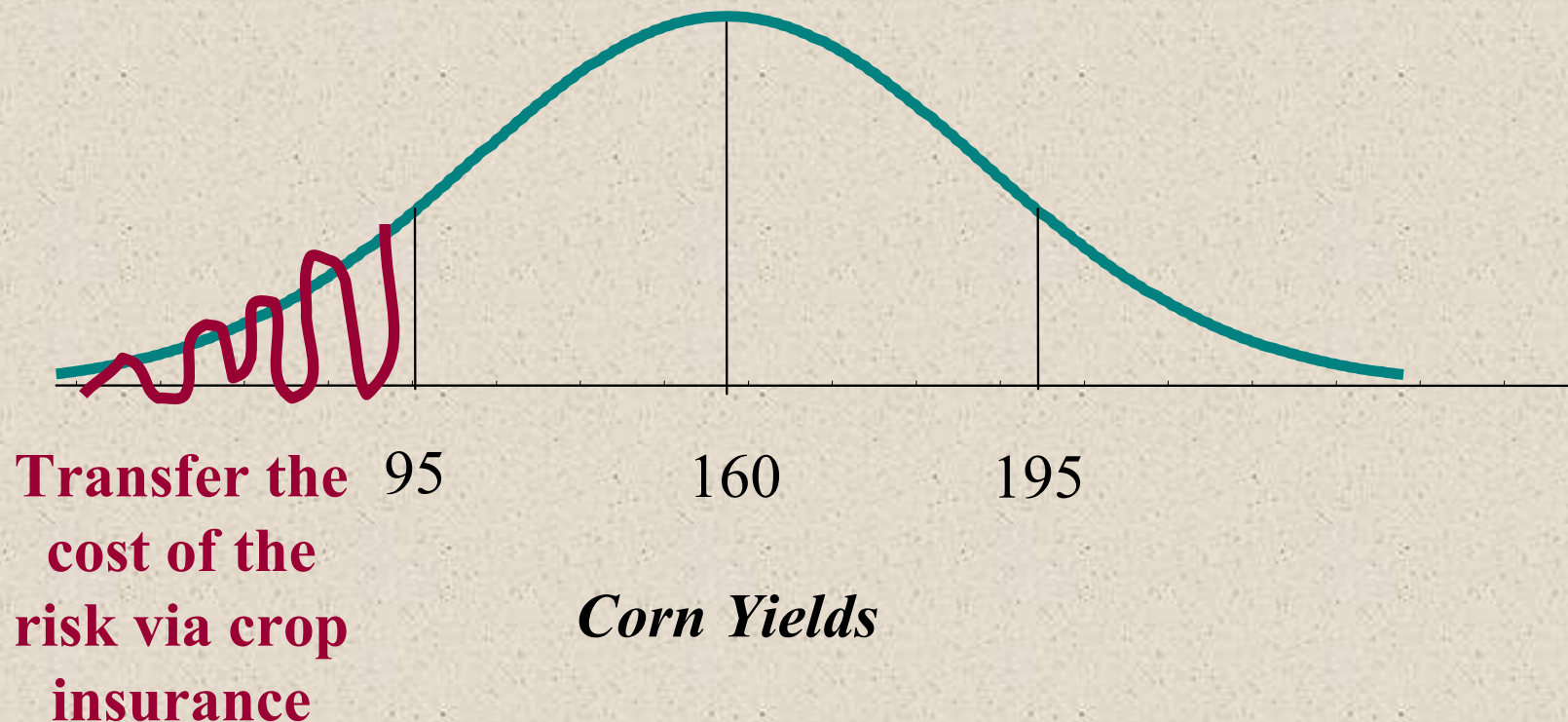
Divorce

Disagreement

Production Risk

Risk: Poor weather event causing the undesirable outcome of lower than expected yields.

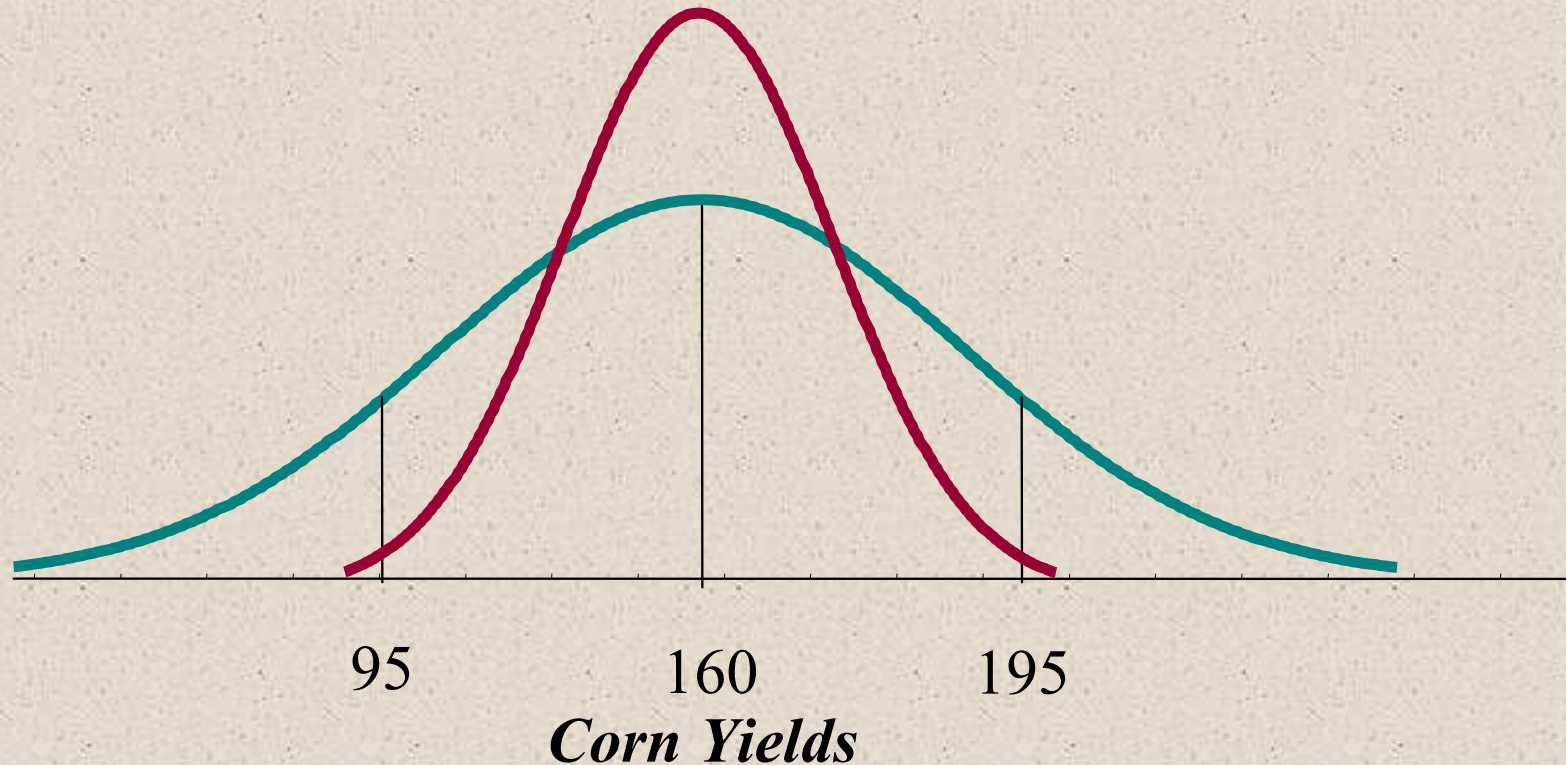
Risk Management???



Production Risk:

Risk: of a poor weather event causing the undesirable outcome of lower than expected yields

Risk Management???

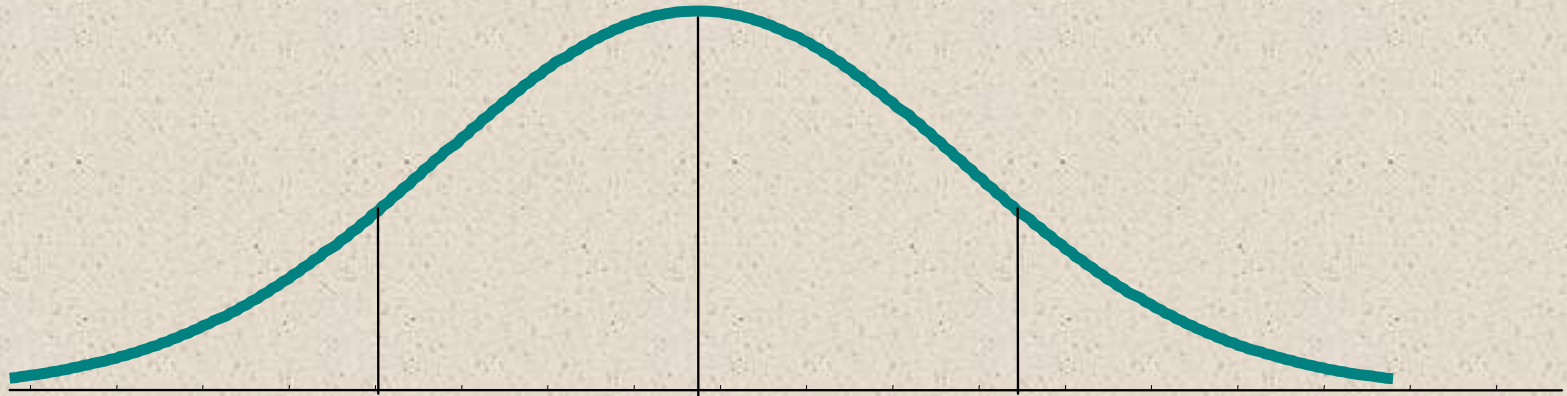


Reduce the cost of the risk via spatial location, multiple variety selection, and other cropping practices.

Financial Risk

Risk: higher interest rates causing the undesirable outcome of lower than expected income/cash flow

Risk Management???



Cash Flow

Do Nothing

Financial Risk

Risk: higher interest rates causing the undesirable outcome of lower than expected income/cash flow

Risk Management???



**Transfer the
risk via fixed
rate loans**

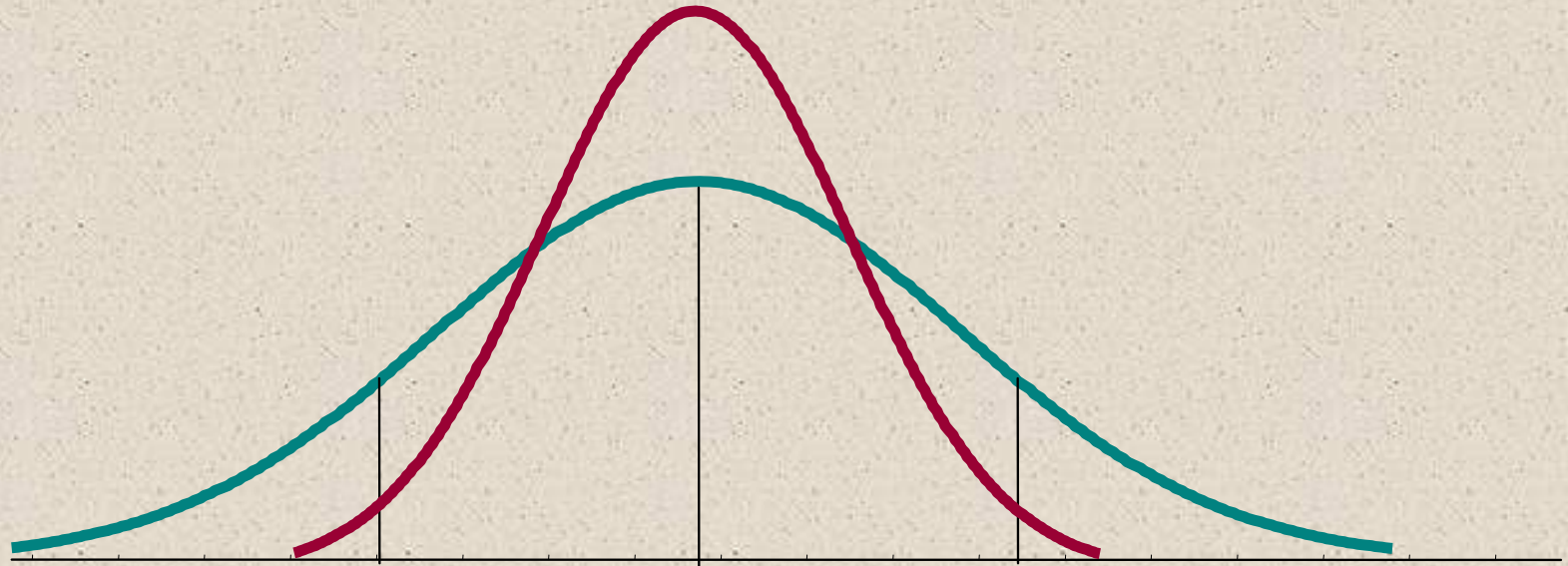
Cash Flow

Do Nothing

Financial Risk

Risk: higher interest rates causing the undesirable outcome of lower than expected income/cash flow

Risk Management???



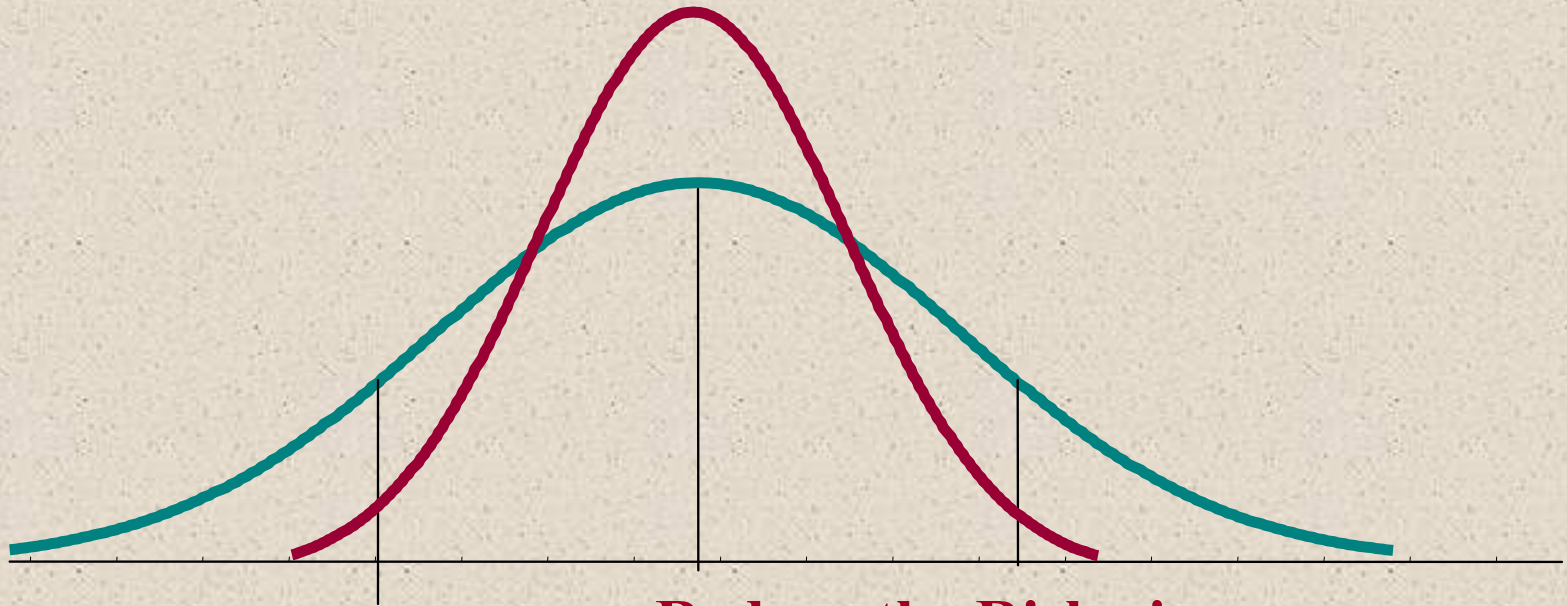
Transfer the
risk via fixed
rate loans

Cash Flow
Do Nothing

Reduce the cost of
the negative
impact via lower
debt financing

Risk: Cost of hired labor not showing up or making a mistake causing lower production, injury, or death

Risk Management???

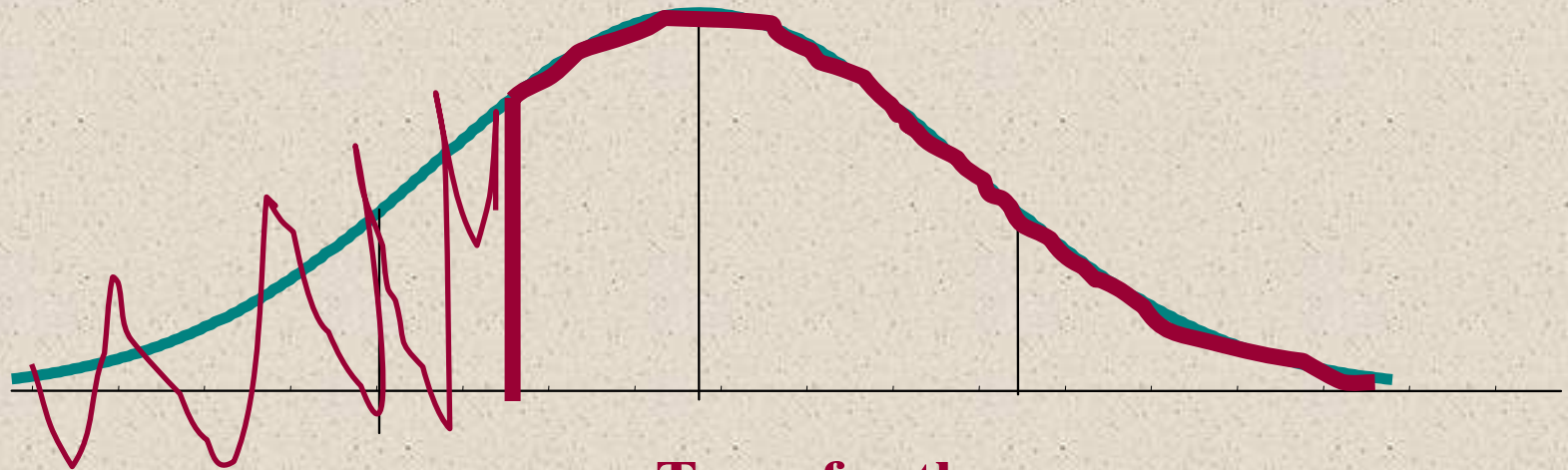


Reduce the Risk via:

- Regular employee meetings
- Training programs
- Well written position descriptions
- Incentive plans

Risk: Cost of hired labor not showing up or making a mistake causing lower production, injury, or death

Risk Management???

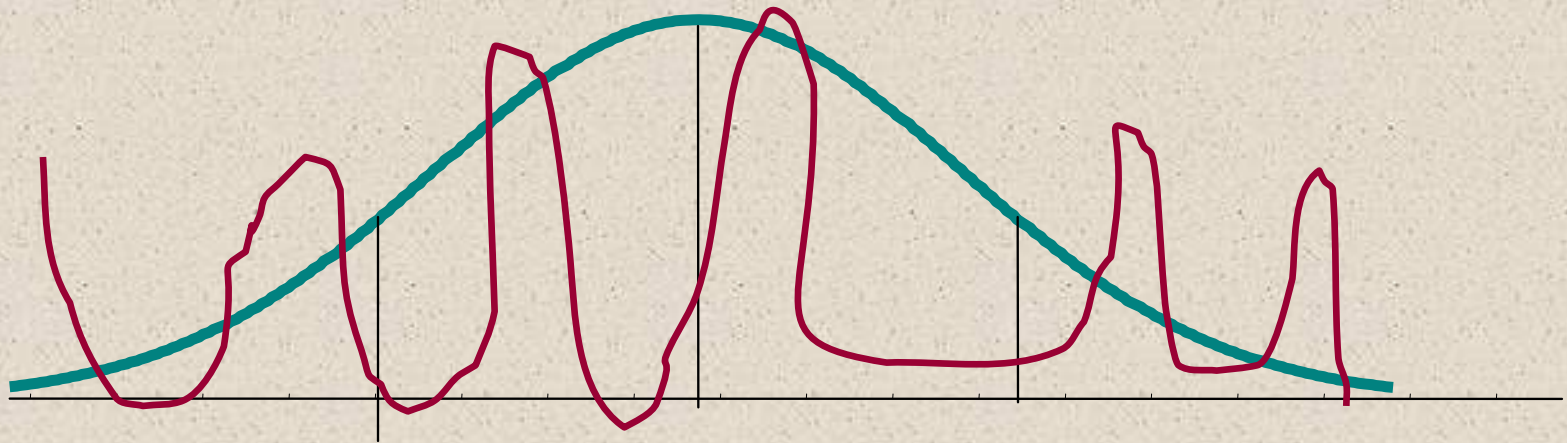


**Transfer the
risk via
disability and
other
insurance**

Human Resources

Risk: Cost of hired labor not showing up or making a mistake causing lower production, injury, or death

Risk Management???

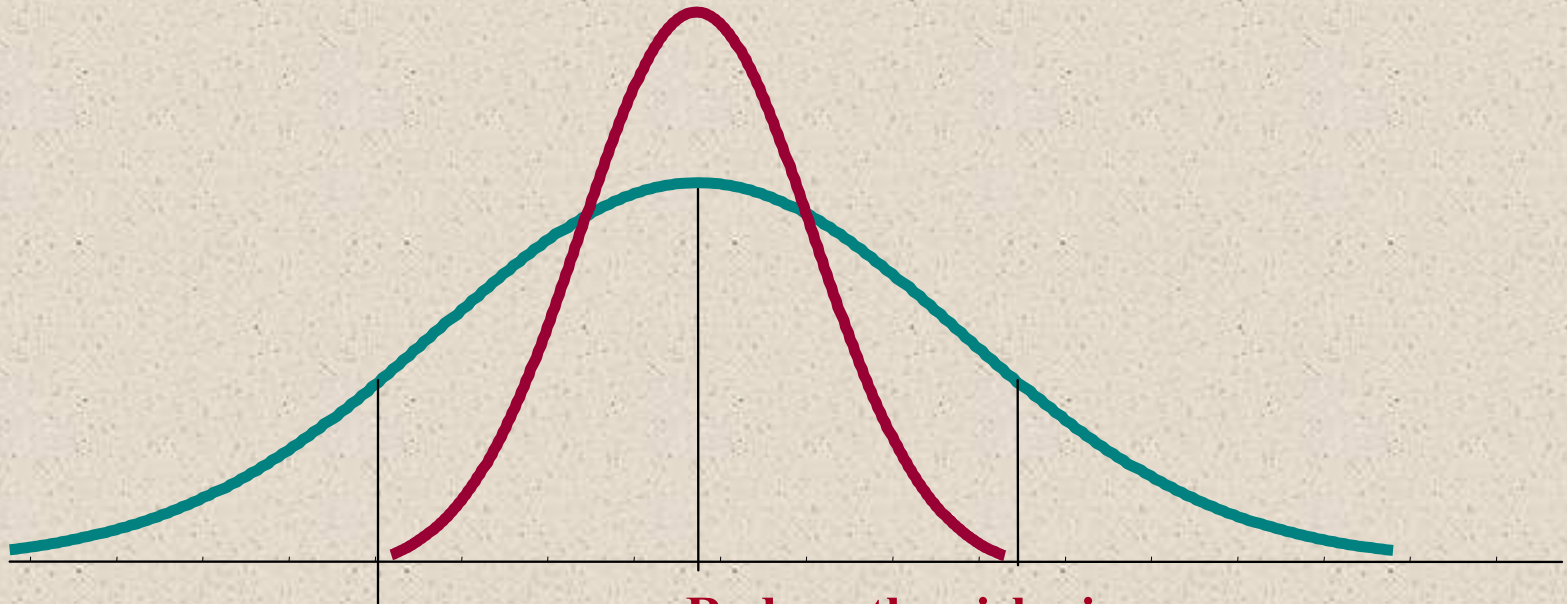


**Avoid the risk
by not hiring
any employees**

Environmental Risk

Risk: manure spill causing the undesirable outcome of fines, lawsuits, and loss of income

Risk Management???



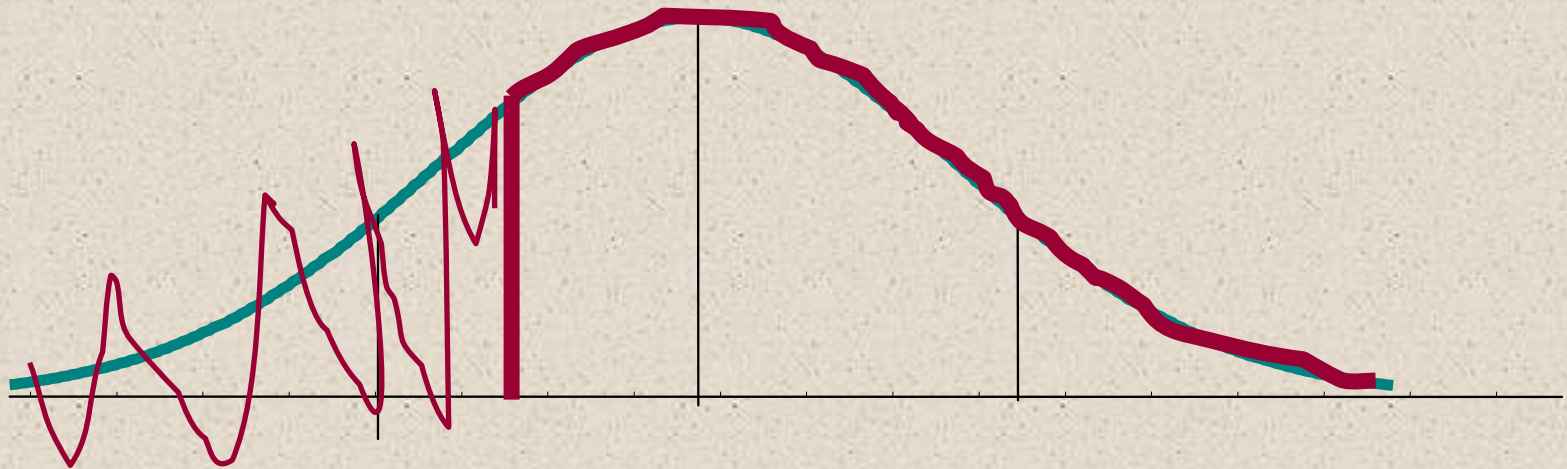
Reduce the risk via:

- Education
- Facilities
- Monitoring checks and systems
- Field and manure trt. practices

Environmental Risk

Risk: manure spill causing the undesirable outcome of fines, lawsuits, and loss of income

Risk Management???

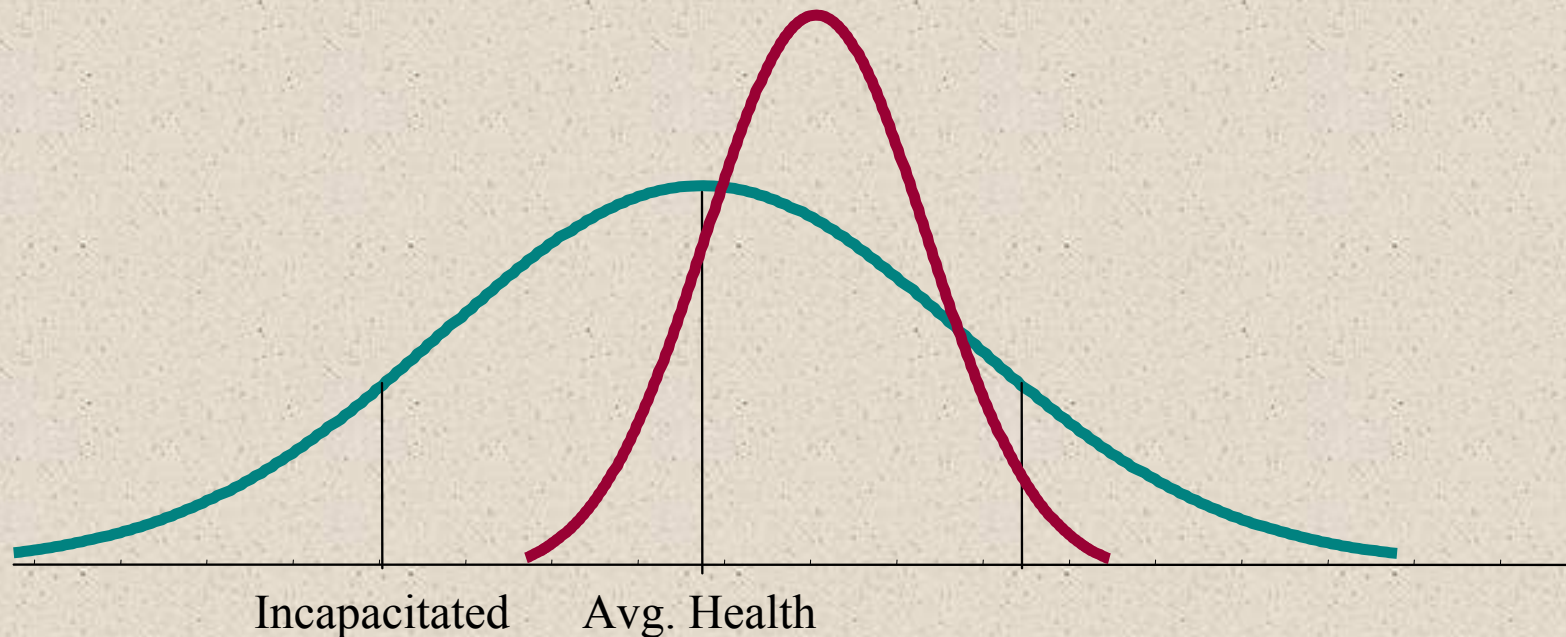


**Transfer the risk via
liability insurance**

Disability Risk

Risk: poor health causing loss of income

Risk Management???



Reduce incidence or impact of risk via:

-Annual health exam

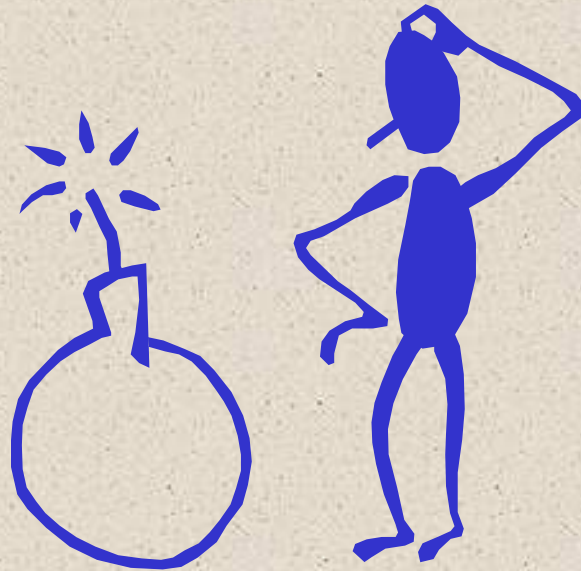
- Quit smoking

-Exercise

-Disability Insurance

-Co-Manager

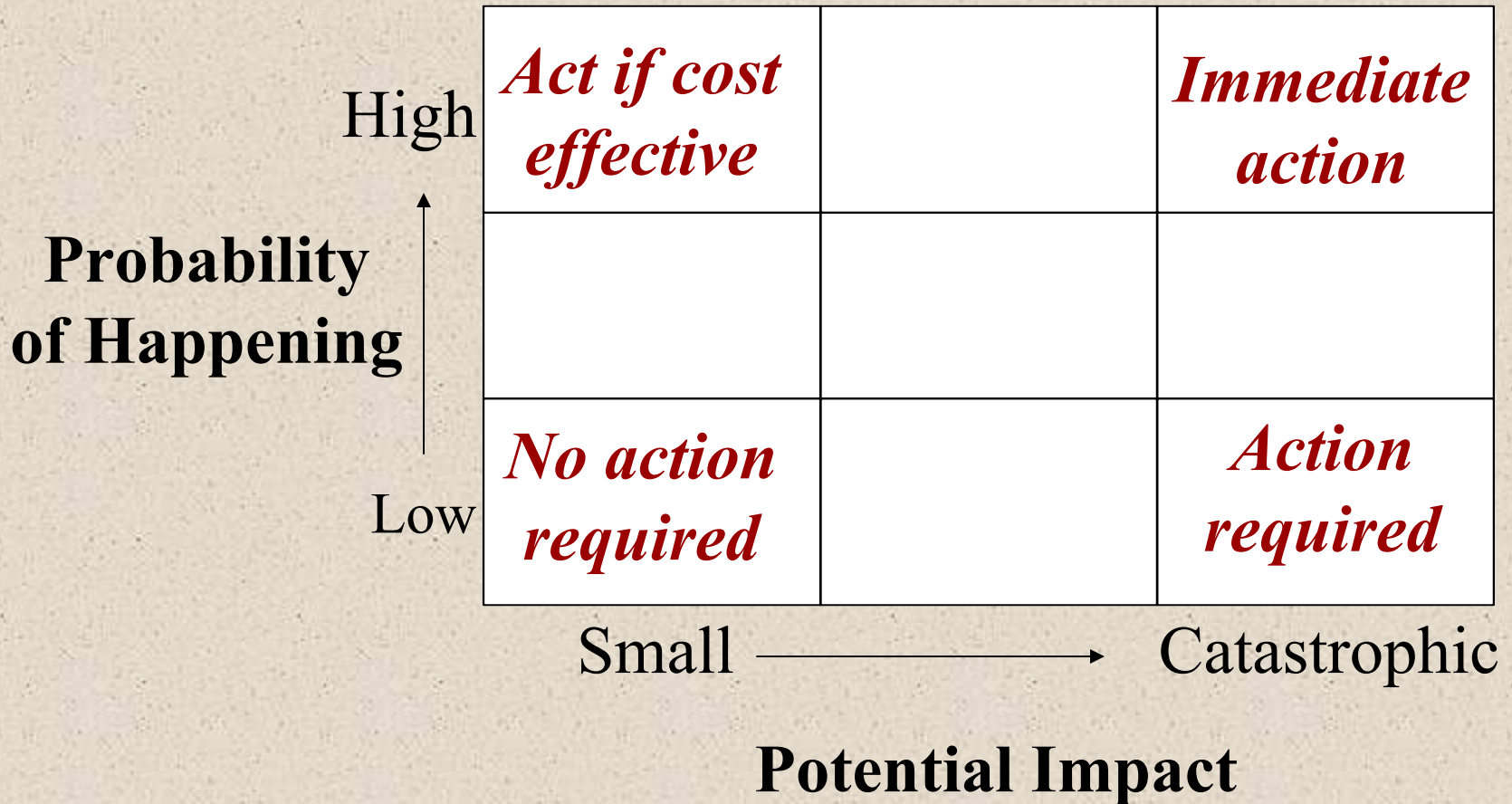
**So, I now know
What Risk Management is, but
How do I do it???**



How???

- Step 1: Be aware, identify the risks you face.
- Step 2: Evaluate:
 - the likelihood that the risk will occur, and
 - how bad the hurt will be if it does occur
- Step 3: Decide on how you will address the risk
 - reduce, transfer, avoid, nothing, or some combination
- Step 4: Implement
 - What is the most frustrating words used in management??
Answer: “If I had only
- Step 5: Control
 - Monitor to assure that what you said you would do, you did, and that you are getting what you want out of your your risk management strategies.

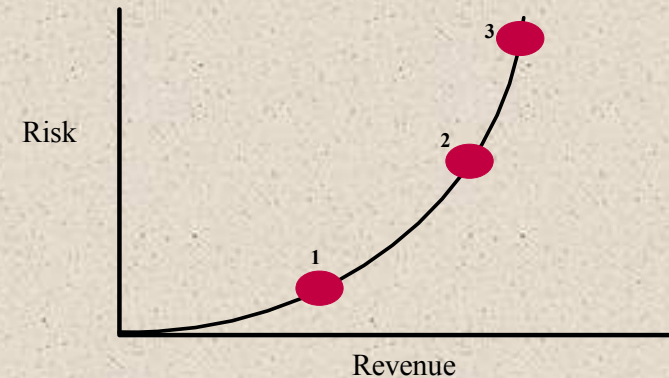
Prioritizing Which Risks to Address First



Source: Dr. Geoff Benson, North Carolina State University

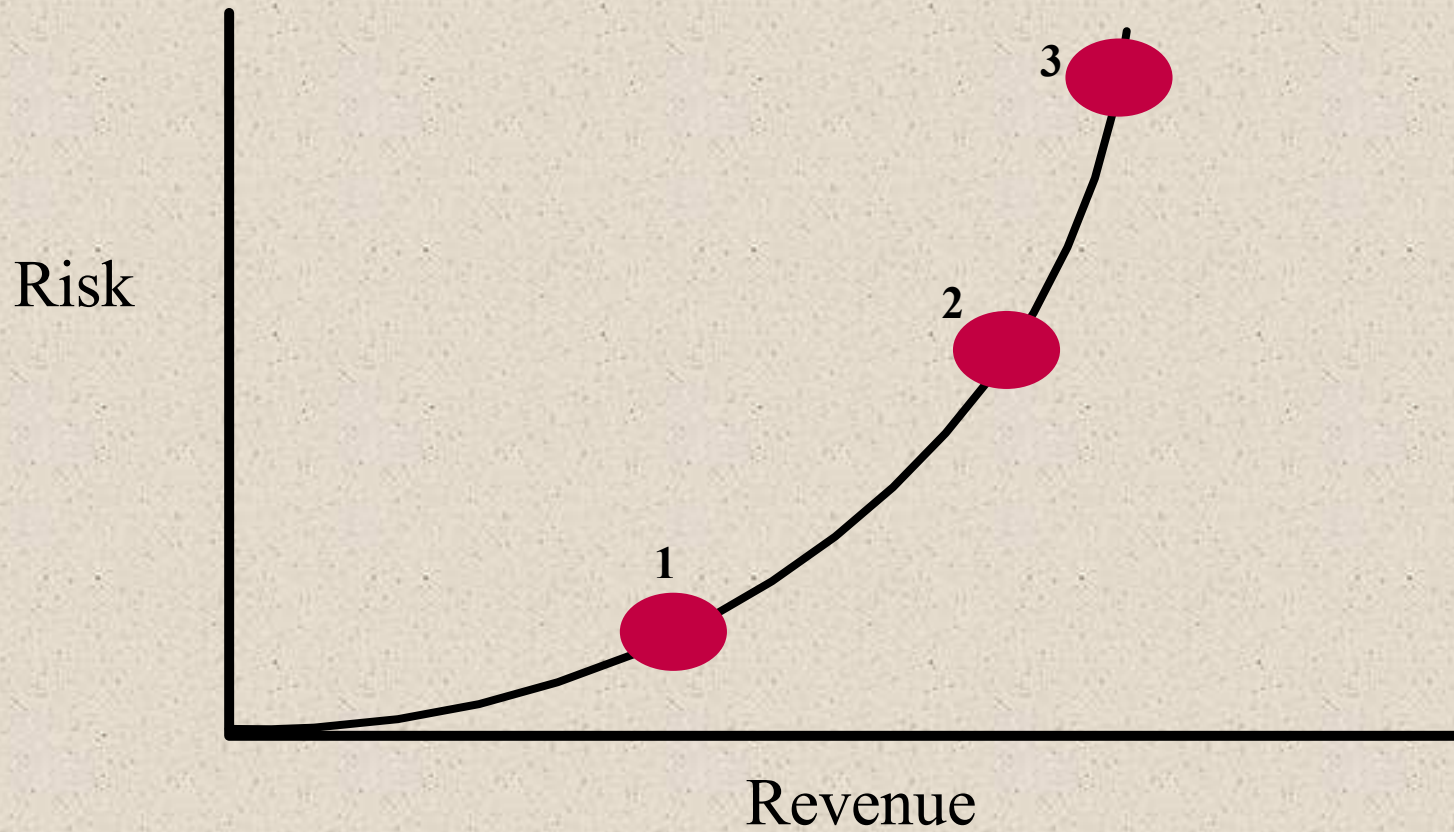
Risk Management Is An Individual Decision

- No one "right" decision



- The "right" decision depends on the characteristics of the
 - operation and
 - individual decision-maker

Risk vs. Profitability





Your Risk Management Team

Extension Agent

Lender

Broker

Dairy Consultant

Nutrition Consultant

Crop Consultant

Technical College Instructors

Input Supply Managers

Other Producers

Insurance Agent

Milk Buyer

Attorneys