

Question 1:

- A. A bakery decorates 840 sugar cookies in 6 hours. What is their productivity?

Answer: Productivity= Outputs/Inputs= $840/6 = 140$ cookies per labor hour.

- B. If by using standard forms and stencils for decorating the bakery can now decorate 1020 sugar cookies in 6 hours, what is their new productivity?

Answer: Productivity= Outputs/ Inputs= $1020/6 = 170$ cookies per labor hour.

- C. Calculate the % improvement in productivity.

Answer: Change in productivity= $(\text{New} - \text{Old}) / \text{Old} * 100\% = (170-140)/140*100\% = 21.4\%$
increase in productivity.

- D. What other factors should be considered besides making more cookies? In other words, are there other inputs that should be considered as well?

Answer: Other factors that impact productivity besides labor are capital, management, material and energy. In this particular case capital would need to be expended to buy the standard forms and stencils. Multi-factor productivity would be a better measure of the true improvement in productivity in this case.

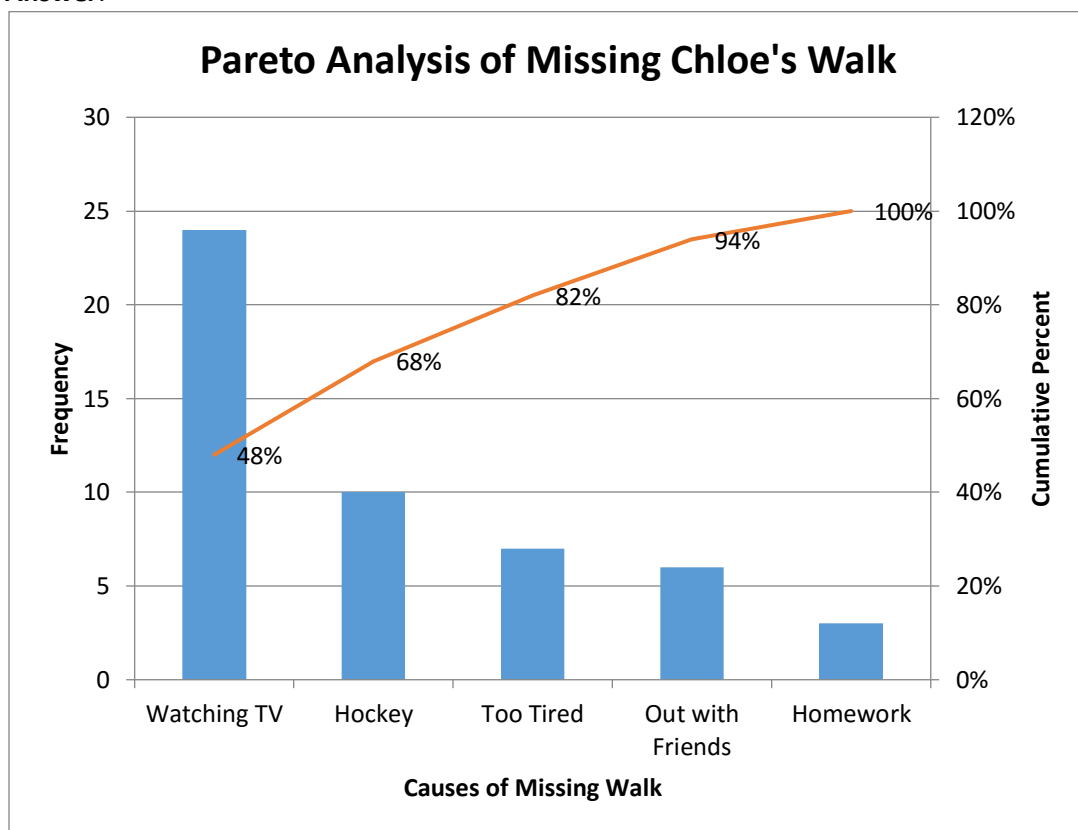
Question 2:

I was noticing that my dog was putting on weight and was analyzing why this was happening. After a few nights I realized that my kids were not taking Chloe for her scheduled walk on a regular basis. I wanted to get to the bottom of this issue and decided to keep a checksheet on the reasons why they were not going for a walk. The chart below details this information.

Reason for Missing Walk	Frequency
Homework	3
Too Tired	7
Watching TV	24
Out with Friends	6
Hockey	10

- A. Create a Pareto analysis of the causes of Chloe missing her walk.

Answer:



- B. Based on the Pareto analysis what should I do now. Remember to include theory from Chapter 3 and 5 in your answer.

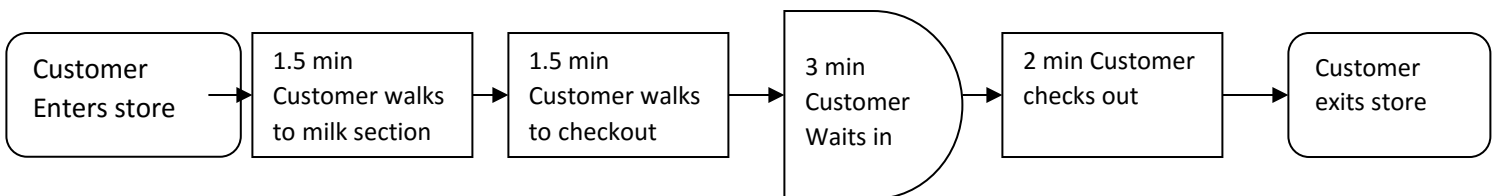
Answer: The cause that happens most frequently is watching TV. If we focus on problem solving and eliminating the cause of watching too much TV, 48% of our quality problem will be eliminated. That means Chloe will get her walk almost 50% more than she is now! I have prioritized our continuous improvement efforts.

Question 3:

A customer walks into a grocery store to buy milk. He spends on average 1.5 minute to walk to the back of the store and pick up the milk, 1.5 minutes to walk to the cashier, 3 minutes in line waiting and 2 minutes for the cashier to check him out.

A. Map the process.

Answer:



B. What is the cycle time?

Answer: Cycle time = 1.5 min + 1.5 min + 3 min + 2 min = 8 min

C. What is the percent value added time?

Answer: % value added time = value added time/ cycle time*100%

$$= \frac{1.5 \text{ min} + 1.5 \text{ min} + 2 \text{ min}}{8 \text{ min}} = \frac{5 \text{ min}}{8 \text{ min}} * 100\% = 62.5\%$$

D. How could the process be improved?

Answer: The following is one answer there may be others:

- Have the grocery store put the milk at the front of the store. Why don't they?
- Think marketing and impulse sales.
- Have the cashier do self-check out, as long as the line there is short!
- Customer walk faster to the milk aisle.
- Have a drive through milk lane at the grocery store.