



Problems for Further Thought

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Factors to Consider

- demand for cookies on campus
- cost of materials
- number of workers
- capital

Changes in Production Plan?

Bottleneck: oven

22 orders x $\frac{5930}{1 \text{ dozen}} = \$264.68 \text{ profit/day}$ x 180 school days = \$36,828

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Profit = \$36,828/school year
Invest in an oven!

Discounts? How much?

Order Qty	Discount	Revenue	Cost	Profit
1	0%	\$1.00	\$0.40	\$0.60
12	10%	\$1.08	\$0.40	\$0.68
24	20%	\$1.16	\$0.40	\$0.76
36	30%	\$1.24	\$0.40	\$0.84

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Market Price = \$1.00/cookie
Labor Cost = \$2.00/minute
Material Cost = \$0.40/cookie

- decreasing cost/desires
- sub dozen would increase labor and material costs due to increased time



Change in Production System?

- standard cookie = NO customization
- result will lead to a change in the production system
- create surplus!
- not as fresh

How much valuable time will it take to fill each order?

Order Qty	Time
1	12 minutes
12	12 minutes
24	12 minutes
36	12 minutes

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Pillsbury Cookie Challenge

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What is the most profitable order?

12 cookies = \$1.08 revenue
12 cookies = \$0.48 cost
12 cookies = \$0.60 profit

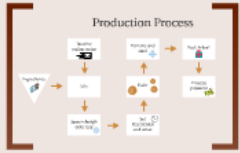
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Promised Delivery & Safety Margin

• Promise delivery after cookies are packed in boxes

Time until order is ready = 30 minutes
Time to finish current order = 10 minutes
Safety margin = 20 minutes

Activity	Time
Rolling dough	2 minutes
Spoon dough	2 minutes
TOTAL	8 minutes



Special Rates?

Discounts should NOT be offered for rush orders
• orders from the contents can pile up orders

Can you fulfill priority while fulfilling current order?

- No!
- Cookies are already in the oven
- Make batter while current order cookies are baking
- Only charge premium if you have to stop and postpone current order

How long does it take to fill a rush order?

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Order Qty	Time
1	12 minutes
12	12 minutes
24	12 minutes
36	12 minutes
TOTAL	48 minutes

Rosette's Cookie Company

Follows the general form, but not all discount cookies

There will be a premium for rush orders
• Rush orders will cost more to make
• Rush orders will be made right away

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Working without your Roommate

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- one dozen = 12 minutes
- more cookies = longer time



Pillsbury Cookie Challenge

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Ingredient



Kristen's Cookie Company

Mission: To provide fresh, hot out of the oven cookies

There will be a plethora of ingredients the customers can choose to add to their cookies. All of this would be available right on campus!

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How long does it take to fill a rush order?

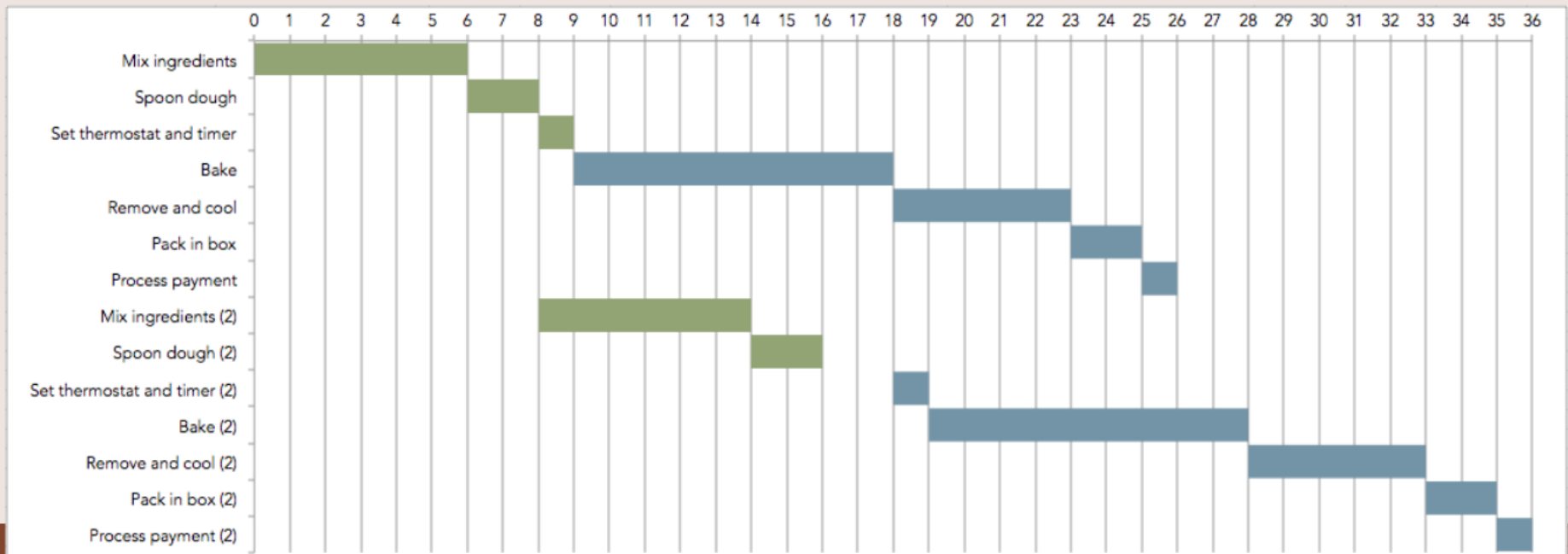
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Process	Time
Mix ingredients	6 minutes
Spoon dough	2 minutes
Set thermostat and timer	1 minute
Bake	9 minutes
Remove and cool	5 minutes
Pack in box	2 minutes
Process payment	1 minute
TOTAL	26 minutes

How many orders can you fill 4 hours a night?

Considering the fact that it takes 26 minutes to complete the first order and 10 minutes after that to complete the next order, we can fulfill 22 dozen orders in one night (4 hours).

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Discounts? How much?

# of cookies	Minutes	Labor Cost @ \$10	Material Cost	Total	Proposed Price
1 dozen	12	2	0.7	\$2.70	\$12
2 dozen	17	2.83	1.4	\$2.12	\$20
3 dozen	22	3.66	2.1	\$1.92	\$28

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Material Cost = \$0.70/dozen

$$\text{Labor Cost} = 12 \text{ minutes} \left(\frac{\$10}{1 \text{ hr}} \times \frac{1 \text{ hr}}{60 \text{ min.}} \right) = \$2.00$$

- decreasing cost/dozen
- 4th dozen would increase labor and material costs due to increased time

Changes in Production Plan?

Bottleneck: oven

$$22 \text{ orders} \times \frac{\$9.30}{1 \text{ dozen}} = \frac{\$204.60 \text{ profit}}{\text{day}} \times 180 \text{ school days} = \$36,828$$

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Profit = \$36,828/school year
Invest in an oven!



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time

