

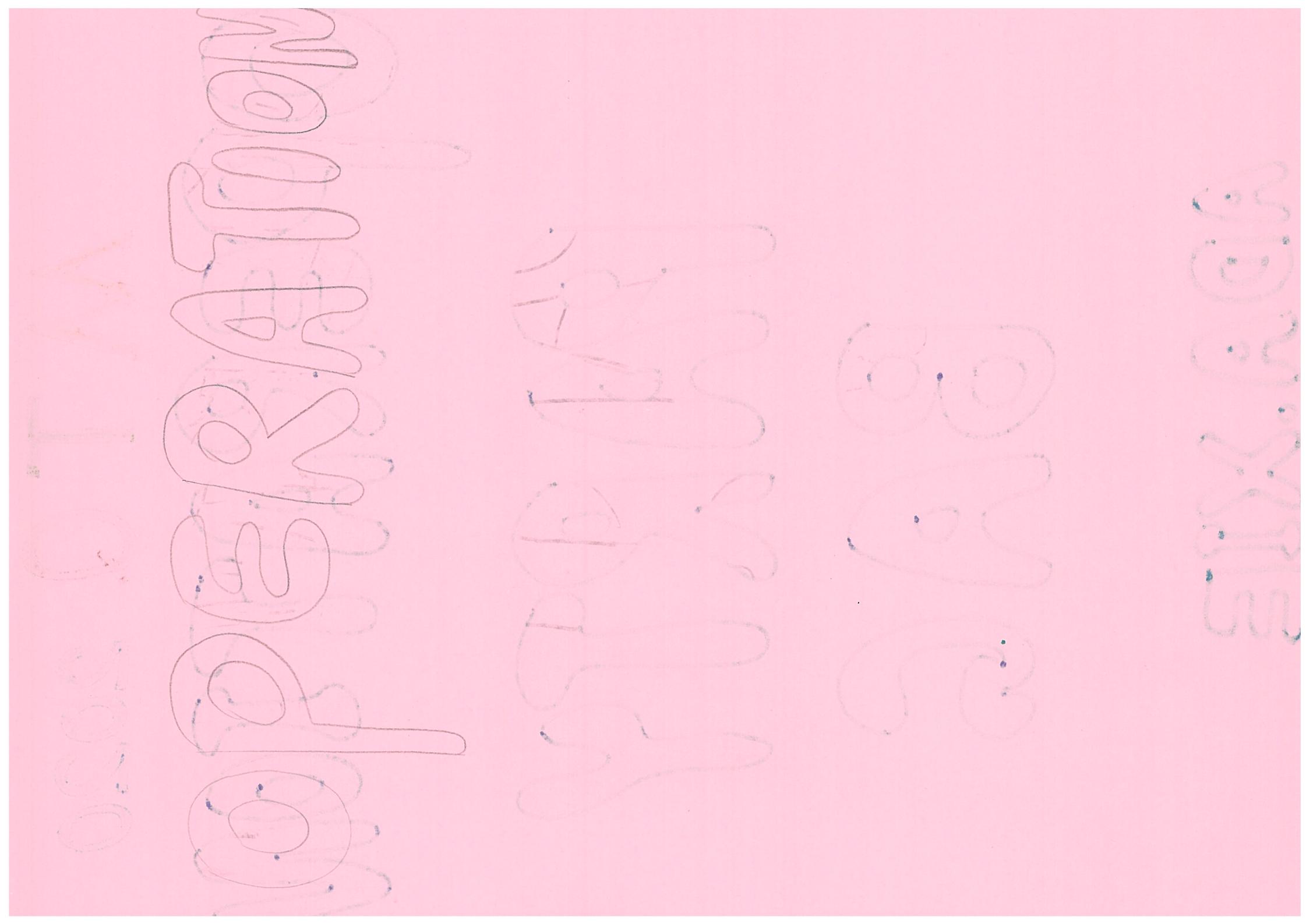
M T Q 2020

OPERATION

PARTY

BAG

ADA.XIE



I want to spend 50 dollars on organising my party bags evenly among 24 people. I want to be able to manipulate the mathematical processes and concepts to solve this problem. I want to make sure that the total cost equals or less than \$50. To solve this problem, I would like to use the following approaches:

- Addition
- Subtraction
- Multiplication
- Division
- Grouping
- Graphs

AIM

APPROACH

I would like to explain why I want to use a range of approaches to solve the problem. First, I would like to use Addition to find out the amount of people I want to give the party bags to. I also need to use Addition to add up the total cost of each item. Second, I want to use subtraction to find out the amount of money left after purchasing each type of item. Third, I want to use Multiplication to find out the amount of packets that I will need to use. I also used multiplication to find out the total amount of money that I can use to purchase the items. Fourth, I want to use division to find out the amount of money that can spend on

each people. At last, I would like to use grouping and graphs to find out the amount of item that each people can have. I also want to use bar chart to display the most and least expensive item.

PREDICTION

Is 50 dollars enough to buy what I need? Yes. I would like to operate 24 party bags using 50 dollars. I equally shared \$50 among 24 people that means each people's budget is approximately 2 dollars and 8 cents.

$$50 \div 24 \approx 2.08$$

$$\begin{array}{r} 2.080 \\ 24) 50 \\ -48 \\ \hline 20 \\ -192 \\ \hline 80 \end{array}$$



I have searched the price of lollie packs. A pack of 12 mars bars costs 2 dollars and 30 cents. That means each people can get approximately 10 lollies and blow outs. I will

Select a variety of items with the similer price.

There fore, I predict that 50 dollars is enough to buy 24 party bags.

ACTION PLAN



1. I want to read all of the catalogues and decide to choose the amount of items that I want to put in the party bags.
2. Label and name the cost of each type of item.
3. Using the mathematical approaches to find out answers.
4. display the mathematical operations, explain my problem-solving process.
5. Go shopping and make beautiful party bags.
6. hand out the party bags and eat the LEFT OVERS!

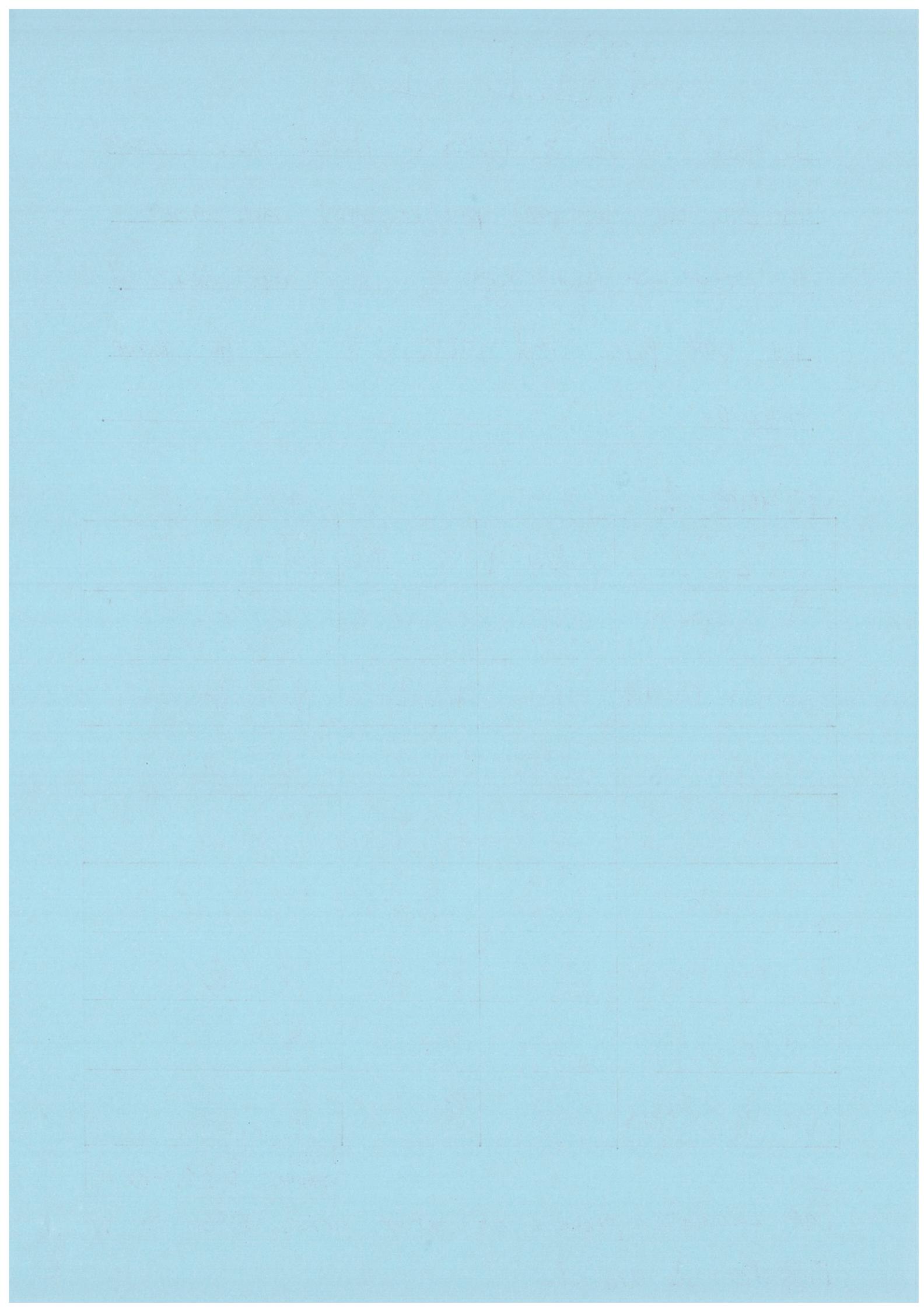
PRICE LIST

- I have selected 8 types of items that I would like to use for my party bags. I have listed the cost of each type of item and calculated the unit price and total cost as the table belows:

Figure 1

ITEM	QUANTITY	UNIT PRICE	TOTAL COST
MARS	24	\$0.25	\$6.00
Cream candies	30	\$0.12	\$2.80
Twirl	24	\$0.21	\$5.00
Juice	24	\$0.32	\$7.60
Cookies	28	\$0.43	\$12.00
Party bags	24	\$0.25	\$6.00
Blow outs	25	\$0.08	\$2.00
Party Poppers	25	\$0.08	\$2.00
Total amount \$ 43.40			

- The calculation process of unit price refer to Figure 2 and 3.



\$3
ea

**SAVE
\$1.60**

Mars Medium
Sharepacks 144-216g
Pk 12-18



Figure 2

There are 12 in 1 pack.

I need 24 bars.

$$12 \times 2 = 24 \text{ bars}$$

$$\$3 + \$3 = \$6$$

I need to buy 2 packs of Mars that cost \$6.

$$6 \div 24 = \$0.25$$

$$\begin{array}{r} 0.25 \\ \hline 24) 6.00 \\ 45 \\ \hline 120 \\ 120 \\ \hline 0 \end{array}$$

Unit Price is \$0.25

\$3
ea

**SAVE
\$1**

Arnott's Multipacks
175-200g Pk 7-8



There are 7 in 1 pack.

I need 24 bags of cookies.

$$7 \times 4 = 28 \text{ bags of cookie}$$

$$28 - 24 = 4 \text{ left overs}$$

$$\$3 \times 4 = \$12$$

I need to buy 4 packs of cookies that cost \$12.

$$12 \div 28 = \$0.43$$

$$\begin{array}{r} 0.428 \approx \$0.43 \\ \hline 28) 120 \\ 112 \\ \hline 80 \\ 56 \\ \hline 240 \end{array}$$

Unit Price is \$0.43

\$2.80
ea

**SAVE
70¢**



Werther's Bag
100-140g



There are 30 in 1 pack.
I need 24 candies, 1 pack is enough to share between 24 people.

$$30 - 24 = 6 \text{ candies left over}$$

$$1 \times \$2.80 = \$2.80$$

I need to buy 1 pack of candy that cost \$2.80.

$$2.80 \div 24 = \$0.12$$

$$\begin{array}{r} 0.116 \approx 0.12 \\ \hline 24) 2.80 \\ 24 \\ \hline 16 \\ 144 \\ \hline 16 \end{array}$$

Unit Price is \$0.12

There are 12 in 1 pack.

I need 24 bars.

$$12 \times 2 = 24 \text{ bars}$$

$$\$2.50 + \$2.50 = \$5$$

I need to buy 2 packs of twirls that cost \$5.

$$5 \div 24 = \$0.21$$

$$\begin{array}{r} 0.21 \approx \$0.21 \\ \hline 24) 50 \\ 48 \\ \hline 20 \\ 192 \\ \hline 8 \end{array}$$



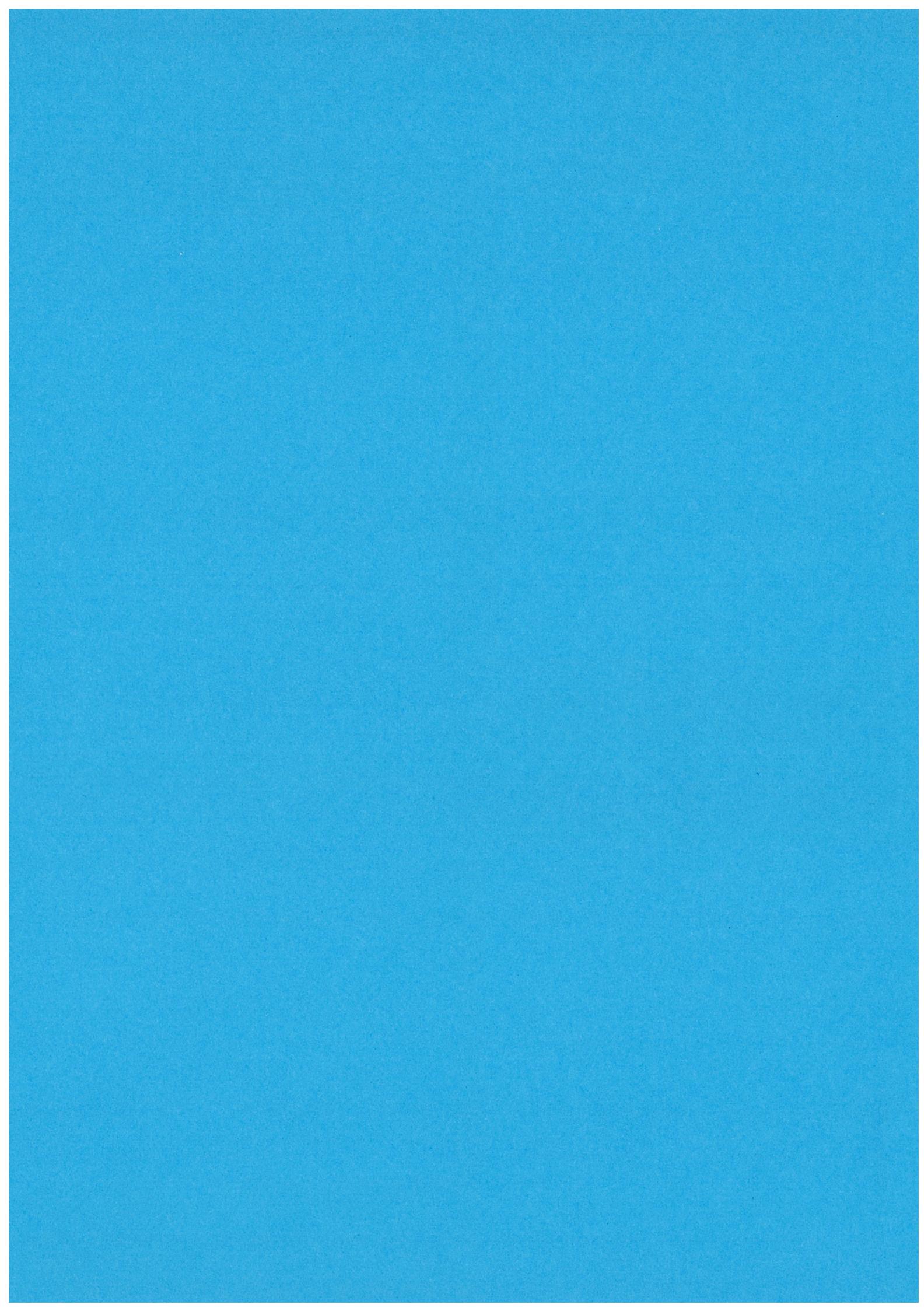




Figure
3



There are 25 in 1 pack.
I need 24 poppers.
 $25 \times 1 = 25$ poppers.
 $25 - 24 = 1$ left over
 $\$2 \times 1 = \2
I need to buy 1 pack of poppers that cost \$2.

There are 8 in 1 pack.
I need 24 bags.

$$8 \times 3 = 24$$

$$\$2 \times 3 = \$6$$

I need to buy 3 packs of party bags that cost \$6.

$$6 \div 24 = \$0.25$$

$$\begin{array}{r} 0.25 \\ 24 \sqrt{60} \\ \underline{-48} \\ 120 \\ \underline{-120} \\ 0 \end{array}$$

Unit Price is \$0.25

There are 6 in 1 pack.
I need 24 tropical punch.

$$6 \times 4 = 24 \text{ boxes}$$

$$\$1.90 \times 4 = \$7.60$$

I need to buy 4 packs of boxes that cost \$7.60.

$$7.60 \div 24 = 0.32$$

$$\begin{array}{r} 0.316 \approx \$0.32 \\ 24 \sqrt{0.62} \\ \underline{-48} \\ 12 \\ \underline{-12} \\ 0 \end{array}$$

Unit Price is \$0.32

There are 25 in 1 pack.
I need 24 blowouts.

$$25 \times 1 = 25$$

$$25 - 24 = 1 \text{ left over}$$

$$\$2 \times 1 = \$2$$

I need to buy 1 pack of blowouts that cost \$2.

$$2 \div 25 = \$0.08$$

$$\begin{array}{r} 0.08 \\ 25 \sqrt{200} \\ \underline{-200} \\ 0 \end{array}$$

Unit Price is \$0.08



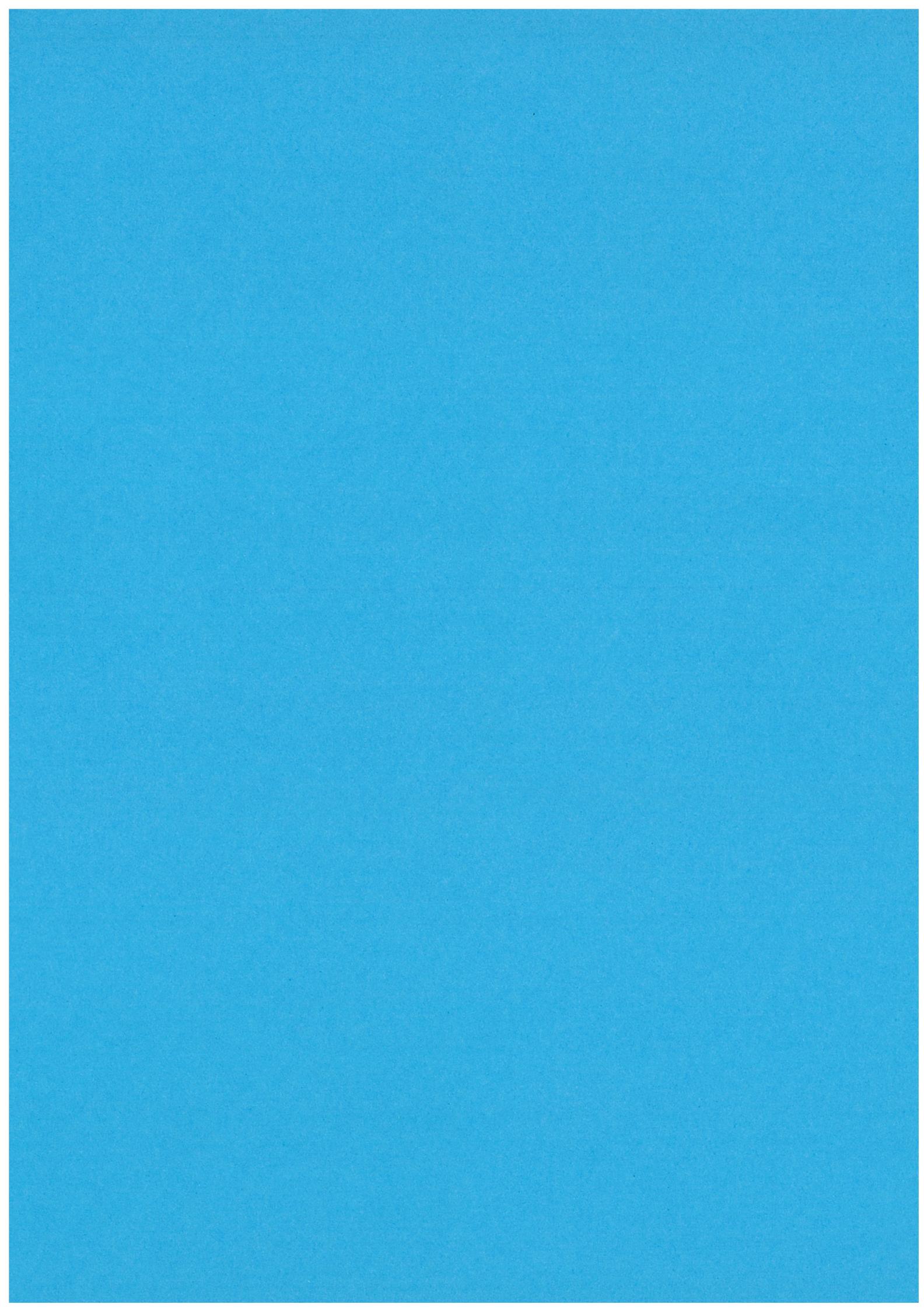
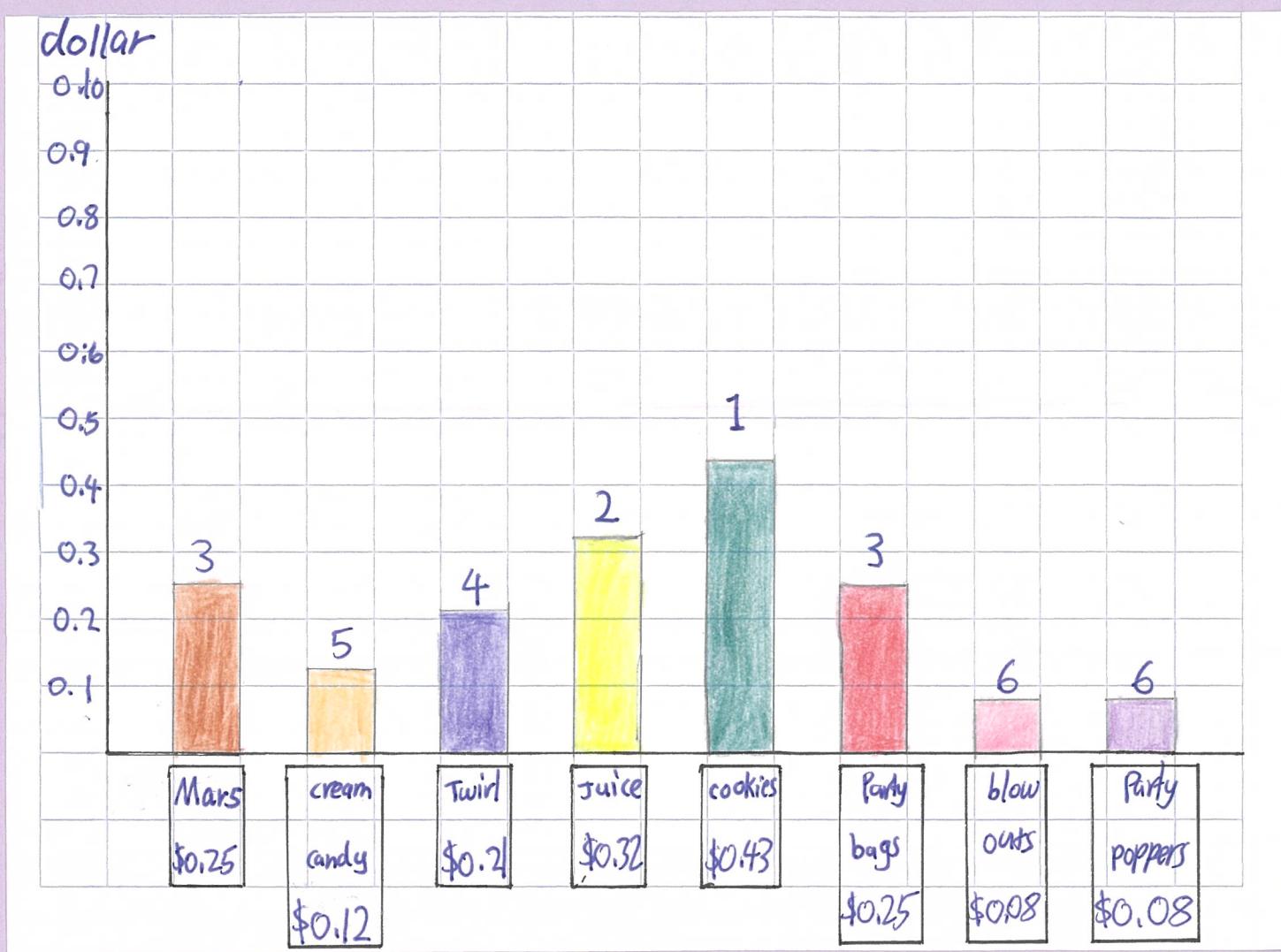
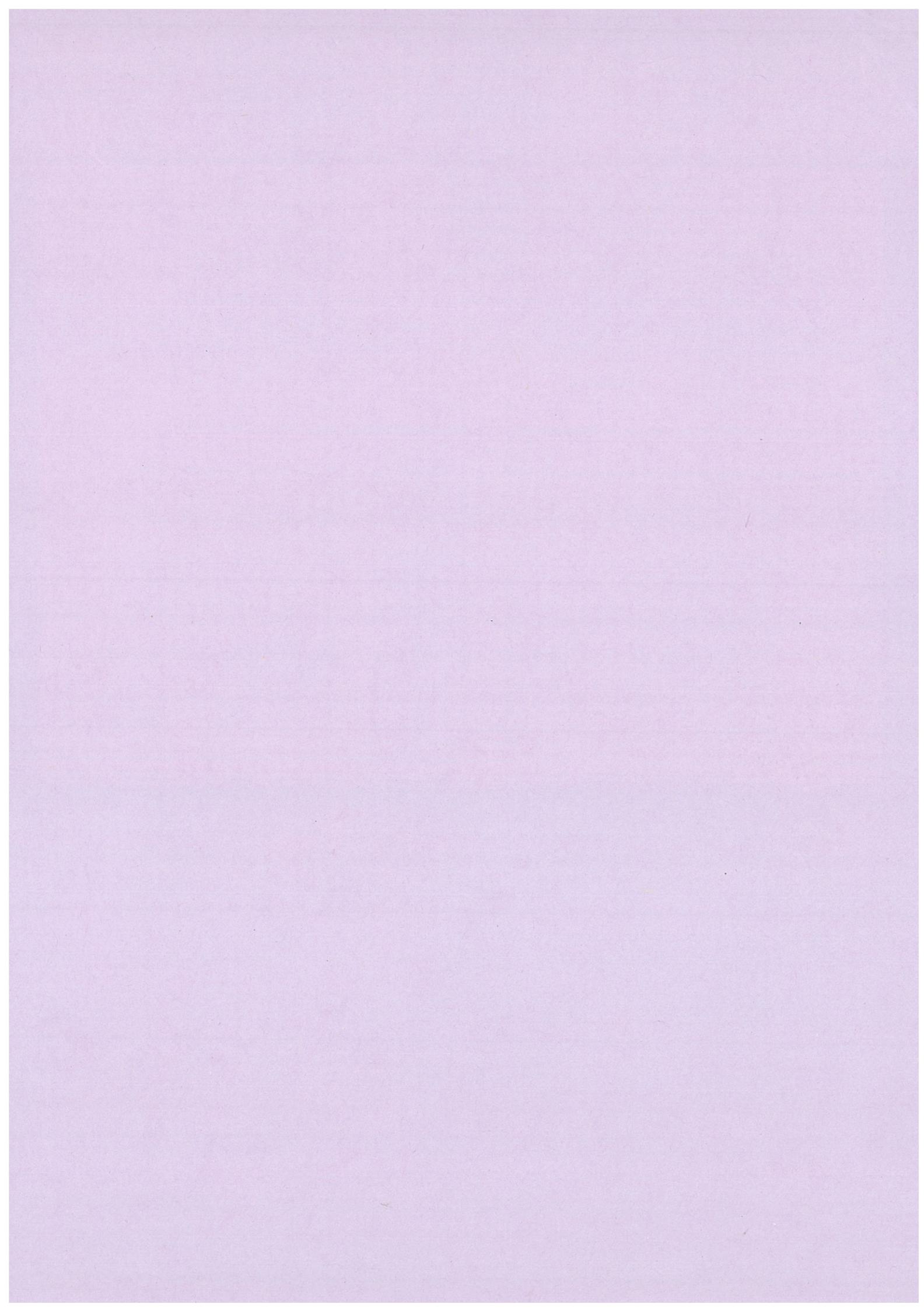


Figure 4: Bar Chart shows a list of Unit Price



This bar chart shows a range of unit price.

- The most expensive item is cookie that costs \$0.43 per item.
- The least expensive item is blow outs and party poppers that cost \$0.08 per item.
- In order from the most expensive to least expensive item are as follows: cookie, juice, Mars and party bags, Twirl, cream candy, blow outs and party poppers.



At this point, I want to know how much I have left on my budget, and I can save it as my pocket money.

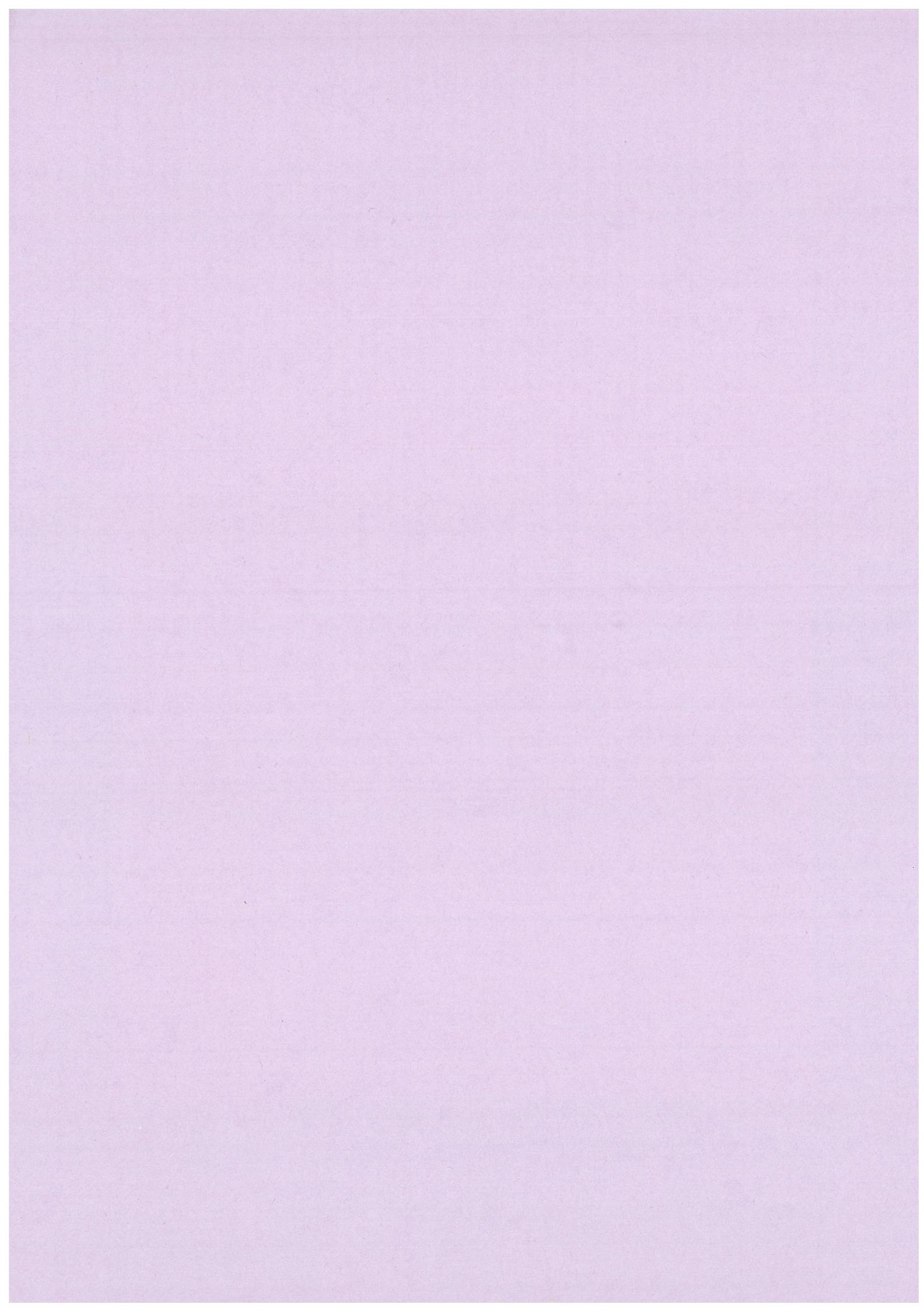
$$\$6 + \$2.80 + \$7.60 + \$5 + \$12 + \$6 + \$2 + \$2 = \$43.40$$

$$\begin{array}{r} + 6 \\ 2.80 \\ \hline + 8.80 \\ 7.60 \\ \hline + 16.40 \\ 5 \\ \hline + 21.40 \\ 12 \\ \hline + 33.40 \\ 6 \\ \hline + 39.40 \\ 2 \\ \hline + 41.40 \\ 2 \\ \hline 43.40 \end{array}$$

$$\$50.00 - \$43.40 = \$6.60$$

$$\begin{array}{r} + 50.00 \\ 43.40 \\ \hline 6.60 \end{array}$$

I have \$6.60 left after buying all the items that I need, I would like to save it as my pocket money.



Why?

However, I got two answers: \$1.74 and \$1.81.

I'm sure that my two strategies are both correct:

Answer: each party bag costs \$1.81

$$\begin{array}{r} 8 \\ \hline 192 \\ \hline 192 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 194 \\ \hline 194 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 24 \\ \hline 43.40 \\ \hline 1.80 \approx 1.81 \end{array}$$

$$143.40 \div 24 \approx \$1.81$$

To divide total cost by 24.

STRATEGY 2:

Answer: each party bag costs \$1.74.

$$0.25 + 0.12 + 0.21 + 0.32 + 0.43 + 0.25 + 0.08 + 0.08 = 1.74$$

To add up the unit price of each item.

STRATEGY 1:

Find out the answer?

At the end of my project, I set up 24 party bags. I wonder how much I spent on each bag and how many strategies that I can use to calculate the value of each party bag.

Calculate the value of each party bag

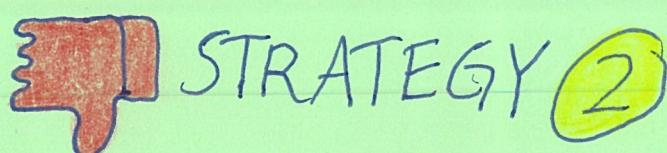
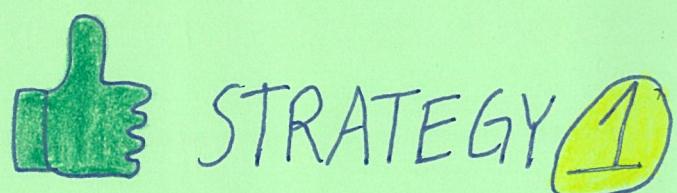
Refer to figure 1, My strategy 1 is based on adding up the unit price of each item.

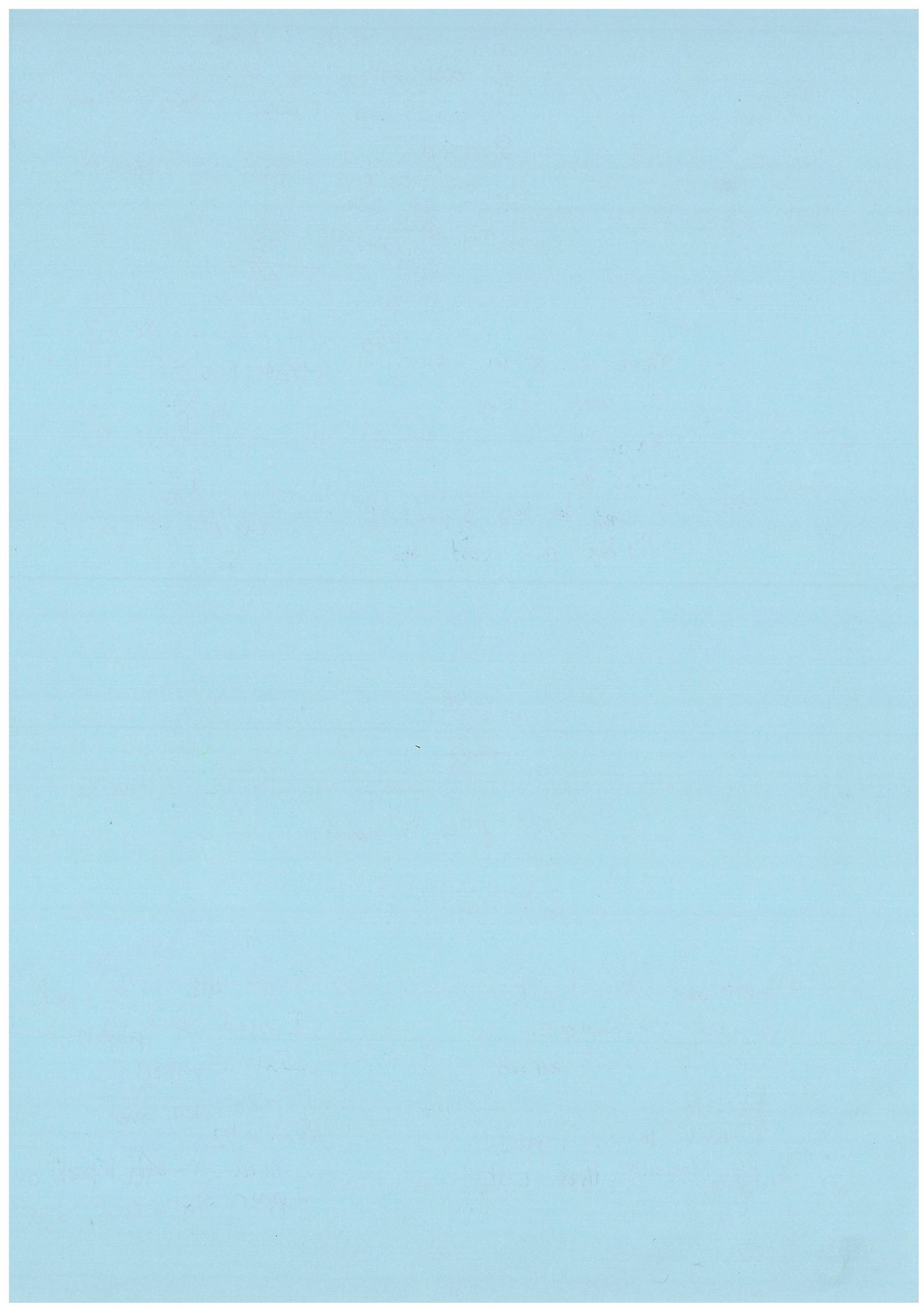
My strategy 2 is based on dividing the total cost \$43.40 by 24. This total amount of money includes extra items out of 24 packs.

For example, I bought 30 cream candies, 28 cookies, 25 blow outs and 25 party poppers. However, I only need 24 items each. That means the cost of extra items is included in the total cost: \$43.40.

So \$1.81 is more than \$1.74, \$1.81 includes the extra items that I don't need. After my investigation, I believe that the answer \$1.74

from strategy 1 is the most accurate answer.





CONCLUSION

I spent less than 50 dollars on organising my party bags successfully among 24 people. My prediction was correct, each party bag costed \$1.74 which was not over my prediction: \$2.08. My action plan was useful, it led me to follow the steps to complete my project. I have used all the mathematical approaches to solve the problem. By the end of my project I have \$6.60 left over for my pocket money, without using the mathematical concepts and strategies, I may not be able to complete my project of operating party bags. Overall, I have done a great job! ☺

REFLECTION

I was wondering how I would evenly share my happiness of my birthday with my classmates. By completing Operation party bags, I used different approaches to evenly share the lollies and toys. Most importantly I didn't break my bank account. I learned that I can use grouping when I am trying to share evenly. I learned that I can use the four operation strategies to distribute my birthday treats. I can use these approaches when I go shopping, so that I can spend money wisely.

In the future, when I become a school captain, I can group the tasks and share work load with my team mates fairly.

I can use these mathematical approaches to solve my real life problems.