

M-A1 Algebra 1 Week 22 3/6

1.) Number of minutes cried by Nate (per night)

2020: 64

2023: 98

$$\frac{\text{New-old}}{\text{old}} * 100\%$$

$$\frac{98-64}{64} * 100\% = \frac{34}{64} * 100\% = \boxed{53\%} \text{ increase}$$

2.) The number of students that respect Nate.

September 9<sup>th</sup>: 186

March 6<sup>th</sup>: 24

$$\frac{24-186}{186} * 100 = -87\%$$

87% decrease

3.) Number of donuts eaten by Nate.

2020: 1,082

2023: 1,974

$$\frac{1974-1082}{1082} * 100\% = 82\% \text{ increase}$$

Probability

Candy

Snickers 14

Reese's Cup 18

Skittles 10

Twix 12

Kit kat 6

total (60)

$$\text{Probability} = \frac{\# \text{ of instances}}{\# \text{ of possibilities}}$$

$$P(\text{kit kat}) = \frac{6 \div 6}{60 \div 6} = \boxed{\frac{1}{10}}$$

$$P(\text{twix}) = \frac{12 \div 12}{60 \div 12} = \boxed{\frac{1}{5}}$$

$$P(\text{Reese's or twix}) = \frac{18+12}{60} = \frac{30 \div 30}{60 \div 30} = \boxed{\frac{1}{2}}$$

## Candy

Snickers	14
Reese's Cup	18
Skittles	10
Twix	12
Kit kat	6
total	60

$$1.) P(\text{Skittles}) \frac{10}{60} \div 10 = \boxed{\frac{1}{6}}$$

$$2.) P(\text{Not snickers}) \frac{60-14}{60} = \frac{46}{60} \div 2 = \boxed{\frac{23}{30}}$$

$$3.) P(\text{snickers or kit kat}) \frac{14+6}{60} = \frac{20}{60} \div 20 = \boxed{\frac{1}{3}}$$

$$4.) P(\text{twizzlers}) \boxed{0}$$

## Candy

Snickers	14
Reese's Cup	18
Skittles	10
Twix	12
Kit kat	6
total	60

Law of Independent Assortment

$$\heartsuit \frac{1}{4} \quad \boxed{\begin{matrix} \cdot \\ \cdot \\ \cdot \end{matrix}} \frac{1}{6} \quad \frac{1}{4} * \frac{1}{6} = \frac{1}{24}$$

P(Reese's and then snickers  
with replacement)

$$\frac{18 \div 6}{60 \div 6} = \frac{3}{10} \quad \frac{14 \div 2}{60 \div 2} = \frac{7}{30}$$

$$\frac{3 \div 3}{10} * \frac{7}{30 \div 3} = \frac{1}{10} * \frac{7}{10} = \boxed{\frac{7}{100}}$$

P(kit kat and then  
twix with replacement)

$$\frac{6}{60} = \frac{1}{10} \quad \frac{12}{60} = \frac{1}{5}$$

$$\frac{1}{10} * \frac{1}{5} = \boxed{\frac{1}{50}}$$

<u>Candy</u>	
Snickers	14
Reese's Cup	18
Skittles	10
Twix	12
Kit kat	6
<hr/> total	<u>(60)</u>

P(Snickers and then Reese's  
without replacement)

$$\frac{14}{60} \div 2 = \frac{7}{30}$$

$$\frac{18}{59}$$

$$\frac{7}{30} * \frac{18}{59} \div 6 =$$

$$\frac{7}{5} * \frac{3}{59} = \boxed{\frac{21}{295}}$$

P(Twix and then a twix  
without replacement)

$$\frac{12}{60} \div 12 = \frac{1}{5}$$

$$\frac{11}{59}$$

$$\frac{1}{5} * \frac{11}{59} = \boxed{\frac{11}{295}}$$

<u>Candy</u>	
Snickers	14
Reese's Cup	18
Skittles	10
Twix	12
Kit kat	6
<hr/> total	<u>(60)</u>

1.) P(kit kat and then snickers  
with replacement)

$$\frac{6}{60} = \frac{1}{10}$$

$$\frac{1}{10} * \frac{7}{30} = \boxed{\frac{7}{300}}$$

$$\frac{14}{60} \div 2 = \frac{7}{30}$$

2.) P(Skittles and then Reese's  
without replacement)

$$\frac{10}{60} \div 10 = \frac{1}{6}$$

$$\frac{18}{59}$$

$$\frac{1}{6} * \frac{18}{59} \div 6 =$$

$$\frac{1}{1} * \frac{3}{59} = \boxed{\frac{3}{59}}$$

