

تم تحميل هذا الملف من موقع المناهج الإماراتية



الملف حل مراجعة نهائية ريفيل الجزء الثاني

[موقع المناهج](#) ← [المناهج الإماراتية](#) ← [الصف السابع](#) ← [رياضيات](#) ← [الفصل الثالث](#)

روابط مواقع التواصل الاجتماعي بحسب الصف السابع



روابط مواد الصف السابع على تلغرام

[الرياضيات](#)

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المزيد من الملفات بحسب الصف السابع والمادة رياضيات في الفصل الثالث

[حل مراجعة نهائية ريفيل الجزء الأول](#)

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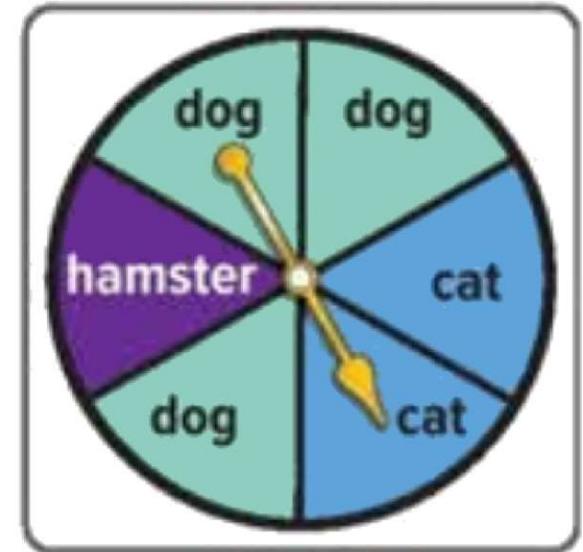
Part (1): 10 MCQ 3marks per question

$$\begin{array}{r} +6 \\ 6 \overline{)10} \\ \underline{6} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$

Outcome: Describe the likelihood of an event

Textbook #513 questions 1-6

The spinner shown is spun once. Classify the likelihood of each event as *impossible*, *unlikely*, *equally likely*, *likely*, or *certain*.



1. the spinner landing on *dog* $\frac{3}{6} = \frac{1}{2} = 50\%$ *Equally likely*

2. the spinner landing on *hamster* $\frac{1}{6} = 0.166\cdot$ *unlikely*

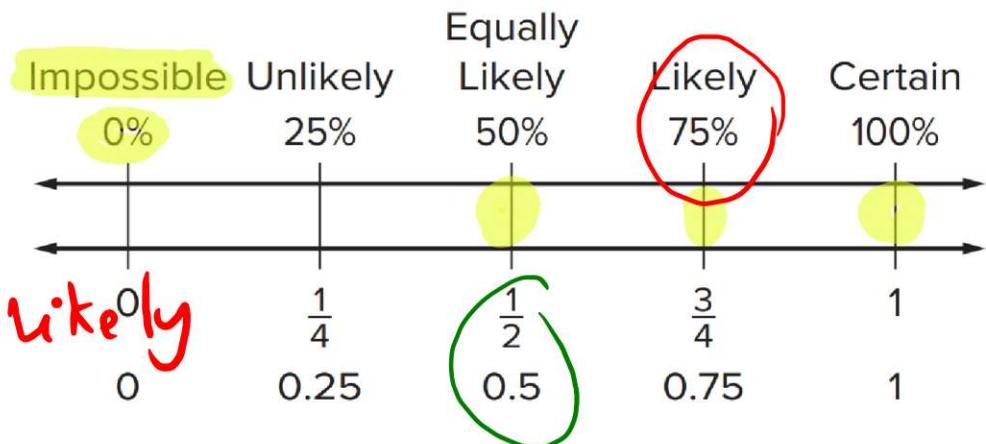
3. the spinner landing on *dog* or *cat* $\frac{3+2}{6} = \frac{5}{6}$ *likely*

4. the spinner landing on *bird* 0 *impossible*

5. the spinner landing on an animal $\frac{6}{6} = 1$ *Certain*

6. the spinner landing on *cat* or *hamster*

$$\frac{2+1}{6} = \frac{3}{6} = \frac{1}{2} \text{ *Equally likely*}$$



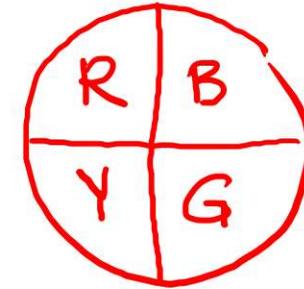
Part (1): 10 MCQ 3marks per question

Outcome: find the relative frequency of an event and use it to predict the future

Textbook #527 questions 1-5

- 1) A spinner with four equal sections of blue, green, yellow, and red is spun 100 times. It lands on blue 14 times, green 10 times, yellow 8 times, and red 68 times. **What is the relative frequency of landing on red? green?**

Relative frequency = $\frac{\text{number of favorable outcomes}}{\text{total number of outcomes}}$



R. F.

Red = $\frac{68}{100} = 0.68$

Blue	14
green	10 ←
Yellow	8
red	68
	<hr/>
	100

R. F.

Green = $\frac{10}{100} = 0.10 = 0.1$

Part (1): 10 MCQ 3marks per question

Outcome: find the relative frequency of an event and use it to predict the future

Textbook #527 questions 1-5

2) The frequency table shows the results of a survey about favorite exhibits. **Find the relative frequency that a randomly selected student's favorite exhibit was either butterflies or trains, as a percent**

%


$$\begin{aligned} \text{relative frequency} &= \frac{12+6}{60} \\ &= \frac{18}{60} = \frac{6 \times 3}{20 \times 3} \\ &= \frac{6}{20} \times 5 \\ &= \frac{30}{100} \\ &= 30\% \end{aligned}$$

Exhibit	Frequency
Butterfly ✓	12
Dinosaurs	25
Planets	17
Trains ✓	6
	60

Part (1): 10 MCQ 3marks per question

Outcome: find the relative frequency of an event and use it to predict the future

Textbook #527 questions 1-5

3) The graph shows the results of an experiment in which a number cube labeled 1 through 6 is rolled a number of times. **Find the relative frequency of rolling a number greater than 3.**

relative frequency = $\frac{9+5+12}{50}$

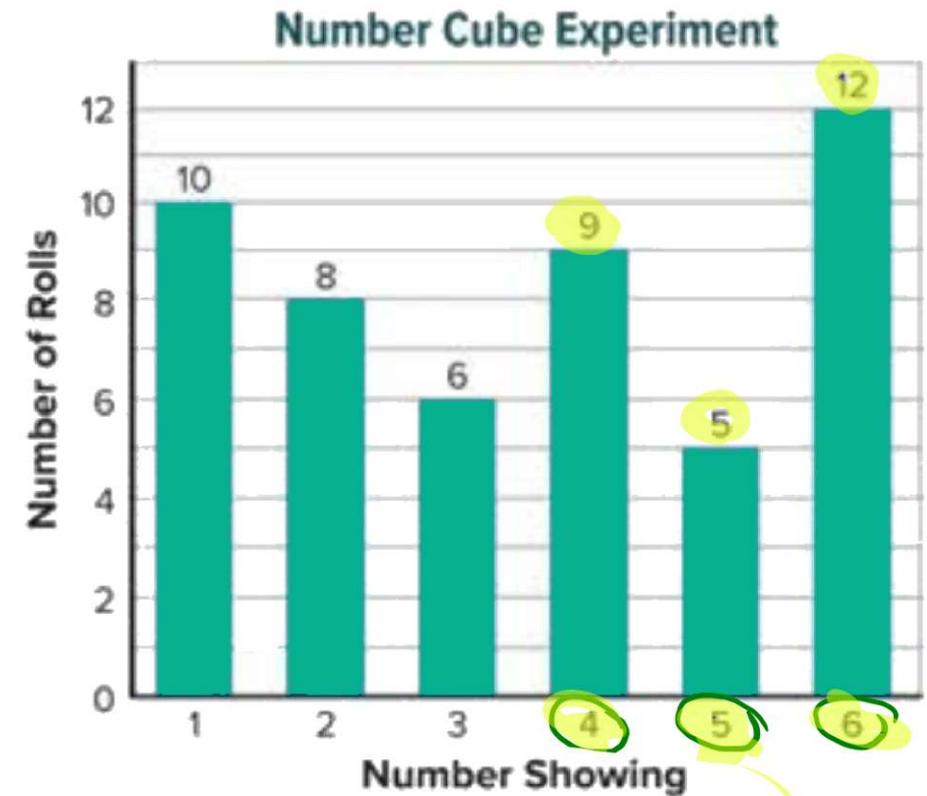
at least 3
3, 4, 5, 6

at most 3
3, 2, 1

$= \frac{26}{50} \div 2$

$= \frac{13}{25}$

$\frac{26 \times 2}{50 \times 2} = \frac{52}{100} = 52\%$



Part (1): 10 MCQ 3marks per question

Outcome: find the relative frequency of an event and use it to predict the future

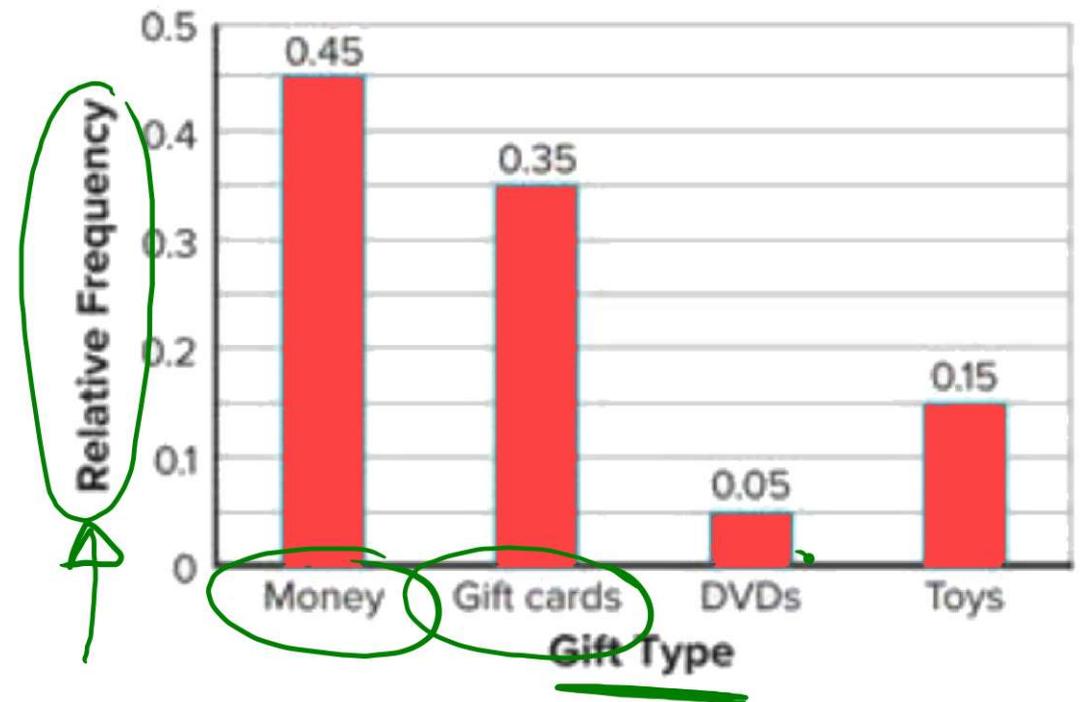
Textbook #527 questions 1-5

4) A random selection of students was asked the question “What type of gift did you last receive?” and the results were recorded in the relative frequency bar graph. **What is the experimental probability that a student chosen at random received a gift card or money?**

$$P(\text{Gift card or money})$$

$$= 0.35 + 0.45$$

$$= 0.80$$



Part (1): 10 MCQ 3marks per question

Outcome: find the relative frequency of an event and use it to predict the future

Textbook #527 questions 1-5

- 5) Based on previous orders, the manager of an ice cream shop determines the probability that a customer will order chocolate sauce is 85%. If there are 240 sundaes ordered in one weekend, how many sundaes are expected to be ordered with chocolate sauce?

X

$$\begin{aligned} P(\text{chocolate sauce}) &= 85\% \\ &= \frac{85}{100} \\ &= 0.85 \end{aligned}$$

number of sundaes are expected

$$\begin{aligned} &= \frac{85}{100} \times 240 \\ &= 0.85 \times 240 \\ &= 204 \checkmark \end{aligned}$$

$$\begin{array}{r} 240 \\ \times 85 \\ \hline 1200 \\ 19200 \\ \hline 20400 \end{array}$$

Part (1): 10 MCQ 3marks per question

Outcome: Find the theoretical probability of a simple event and its complement

Textbook #537 questions 1-6

- 1) The spinner shown is spun once.
What is the sample space?

Sample Space
 $= \{1, 2, 3, 4, 5\}$



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- 2) Each letter in the word MISSISSIPPI is written on a piece of paper and placed into a bag. A letter is drawn at random. **What is the sample space?**

Sample Space
 $= \{M, I, S, P\}$

In a probability experiment, the set of all possible outcomes is called the **sample space**. To find the sample space of a simple event, you can make a list of each unique outcome.

Part (1): 10 MCQ 3marks per question

Outcome: Find the theoretical probability of a simple event and its complement

Textbook #537 questions 1-6

3) A teacher placed the letter cards E, L, O, R, U, and W in a bag. A card is drawn at random.

Determine the theoretical probability for drawing a card that has a vowel on it?

$$= \frac{3}{6}$$

number of vowel letter

$$P(\text{Vowel}) = \frac{3}{6} = \frac{1}{2}$$

$$= 0.5$$

$$= 50\%$$



Part (1): 10 MCQ 3marks per question

Outcome: Find the theoretical probability of a simple event and its complement

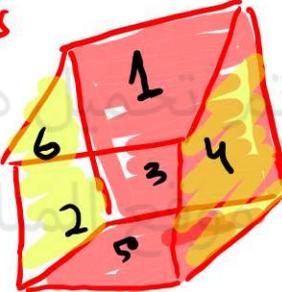
Textbook #537 questions 1-6

- 4) A player in a board game rolls a six-sided number cube labeled 1 through 6 once. **Determine the theoretical probability of rolling a 1 or 2?**

عدد الازداد هو 6
عدد الازداد هو 1 و 2
عدد الازداد هو 1 و 2
عدد الازداد هو 1 و 2

$$P(1 \text{ or } 2) = \frac{1+1}{6}$$

$$= \frac{2}{6}$$

$$= \frac{1}{3}$$


- 5) The table shows the lengths of time for rides at a fair. Zane will choose a ride at random and wants to find the probability of choosing a ride that lasts less than 200 seconds. **What is the probability of the complement of the event?**

$$P(\text{greater than } 200)$$

$$= \frac{3}{8}$$

Ride	Time (seconds)
Barrel	150
Bumper Cars	195
Circus Carousel	210
Log Ride	120
Roller Coaster	55
Swings	225
Train	300
Zero Gravity Spinner	65

$$P(\text{less than } 200) = \frac{5}{8}$$

$$P(\text{greater than } 200) = 1 - \frac{5}{8} = \frac{8}{8} - \frac{5}{8} = \frac{3}{8}$$

Part (1): 10 MCQ 3marks per question

Outcome: Find the theoretical probability of a simple event and its complement

Textbook #537 questions 1-6

6) Red is spun on a spinner with five equal-size sections labeled red, yellow, blue, green, and purple. What is the probability of the complement of the event?

$$P(\text{Red}) = \frac{1}{5}$$

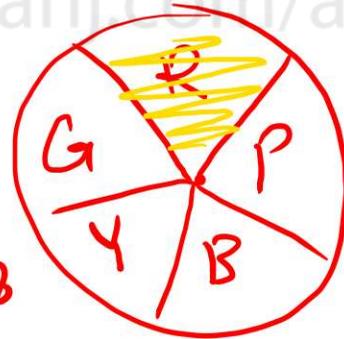
$$P(\text{not Red}) = 1 - P(\text{Red})$$

$$= 1 - \frac{1}{5}$$

$$= \frac{5}{5} - \frac{1}{5}$$

$$= \frac{4}{5} = \frac{8}{10} = 0.8$$

$\times 100 \rightarrow 80\%$



A number cube, with sides labeled 1-6, is rolled. Which is the theoretical probability of rolling a number less than 6, in simplest form?

- (A) $\frac{1}{6}$
- (C) $\frac{1}{3}$

- (B) $\frac{1}{2}$
- (D) $\frac{5}{6}$

$$P(6) = \frac{1}{6}$$

$$P(\text{not } 6) = 1 - \frac{1}{6}$$
$$= \frac{6}{6} - \frac{1}{6}$$
$$= \frac{5}{6}$$

less than 6

Sample Space {1, 2, 3, 4, 5, 6}

$$P(\text{less than } 6) = \frac{5}{6}$$

Part (2): 10 MCQ (5 marks per question)

Outcome: compare relative frequencies to theoretical probabilities.

Textbook #545 questions 1-7

- 1) Jayden spins a spinner with four equal-size sections labeled red, yellow, green, and blue, 40 times. Micah randomly selects one marble from a bag that contains an equal number of red, yellow, green, and blue marbles. He replaces the marble and selects again. Micah repeats this experiment 40 times. Each student records their results in a frequency bar graph. Which student's graph best represents the results that can be expected from each experiment?

Jaden

$$P(\text{Red}) = \frac{8}{40} = \frac{2}{10} = 0.2$$

$$P(\text{Yellow}) = \frac{11}{40} = 0.275$$

$$P(\text{Green}) = \frac{12}{40} = \frac{3}{10} = 0.3$$

$$P(\text{Blue}) = \frac{9}{40} = 0.225$$

Jayden

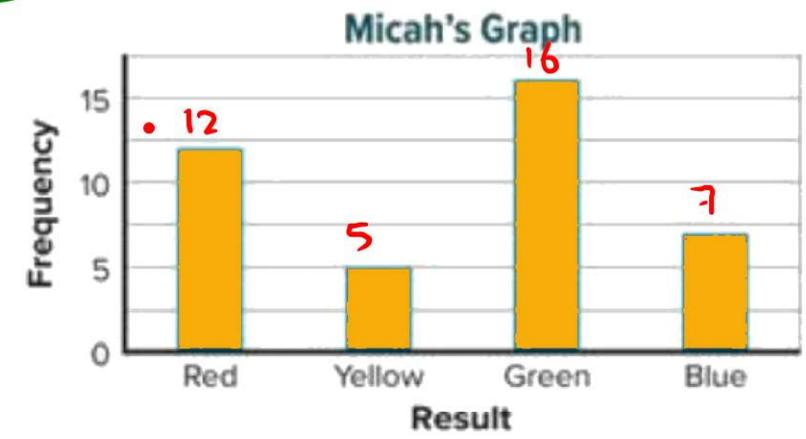
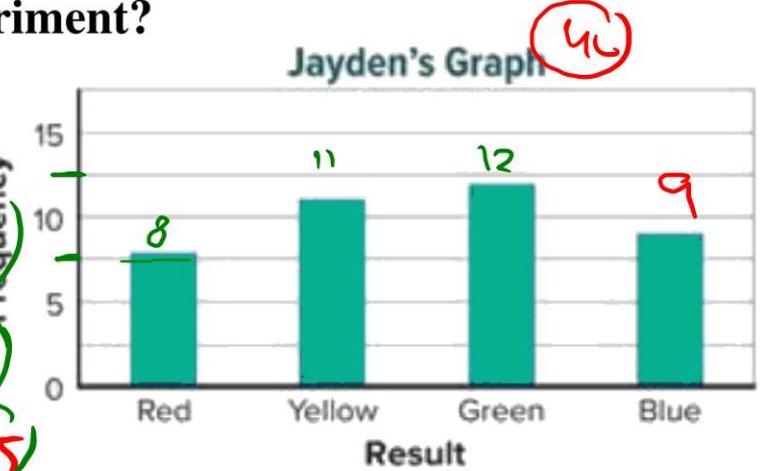
Micah

$$P(\text{Red}) = \frac{12}{40} = 0.3$$

$$P(\text{Yellow}) = \frac{5}{40} = 0.125$$

$$P(\text{Green}) = \frac{16}{40} = 0.4$$

$$P(\text{Blue}) = \frac{7}{40} = 0.175$$



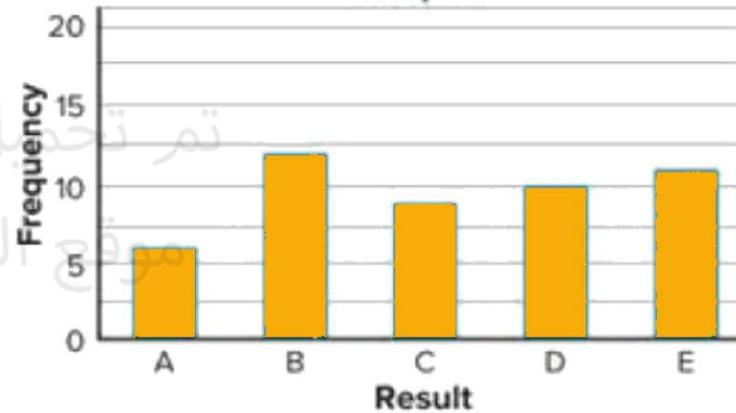
Part (2): 10 MCQ (5 marks per question)

Outcome: compare relative frequencies to theoretical probabilities. **Textbook #545 questions 1-7**

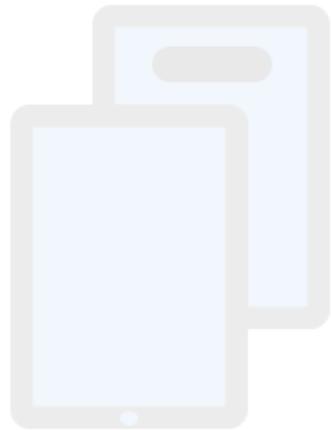
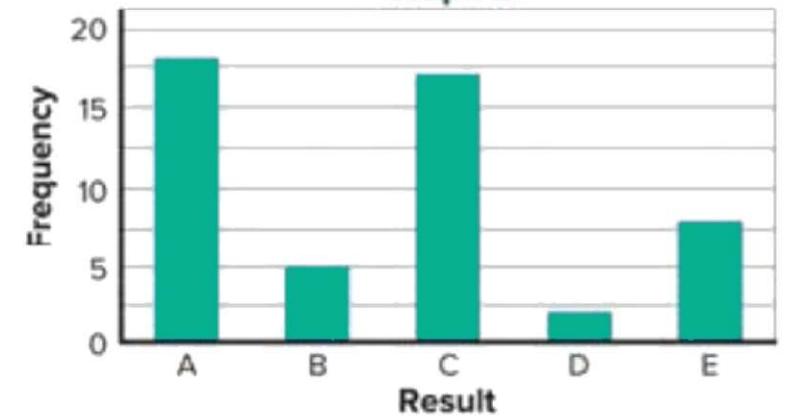
2) Two experiments are conducted and their results are recorded in frequency bar graphs. **Which graph best represents the results that can be expected from Experiment 1? Experiment 2?**

Experiment 1	Experiment 2
✓ A spinner with equal-size sections of A, B, C, D, and E is spun 50 times.	✓ A card is randomly selected from a bag containing five A cards, three B cards, four C cards, one D card, and two E cards. The card is then placed back in the bag. There are 50 trials.

Graph 1



Graph 2



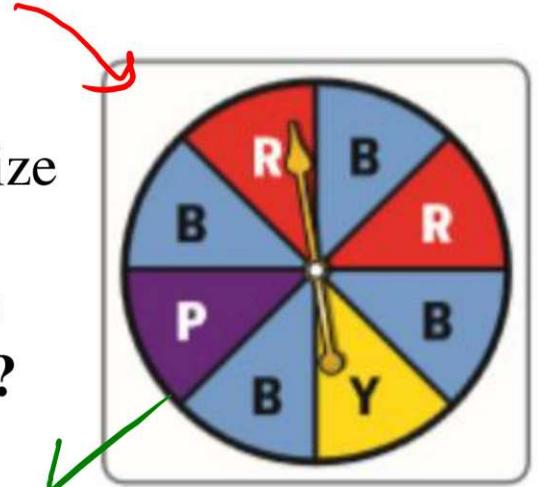
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Part (2): 10 MCQ (5 marks per question)

3) Suppose the spinner shown is spun 80 times. Another spinner with four equal-size sections labeled red, blue, yellow, and purple is spun 80 times. The results are recorded in the following frequency bar graphs. Which graph best represents the results that can be expected from the first spinner? the second spinner?

$\frac{2}{8}$ $\frac{1}{8}$ $\frac{4}{8}$ $\frac{1}{8}$
 (R) (Y) (P) P

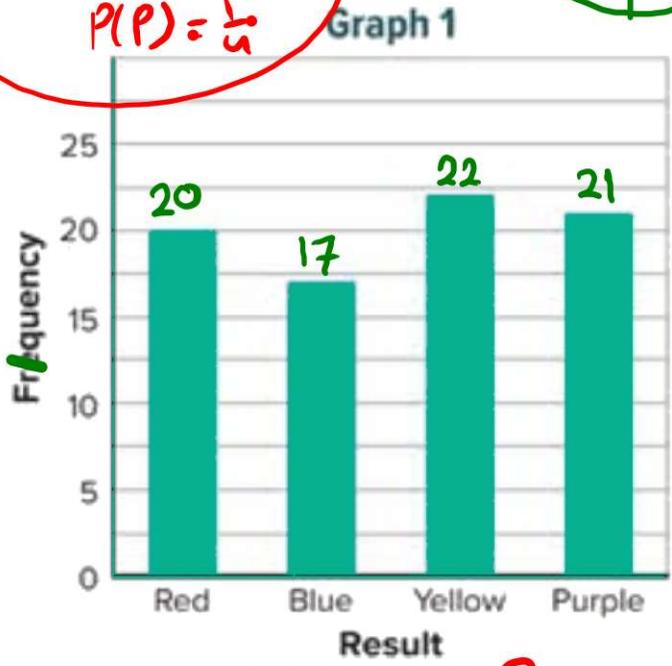


Graph ① **Spinner ②**

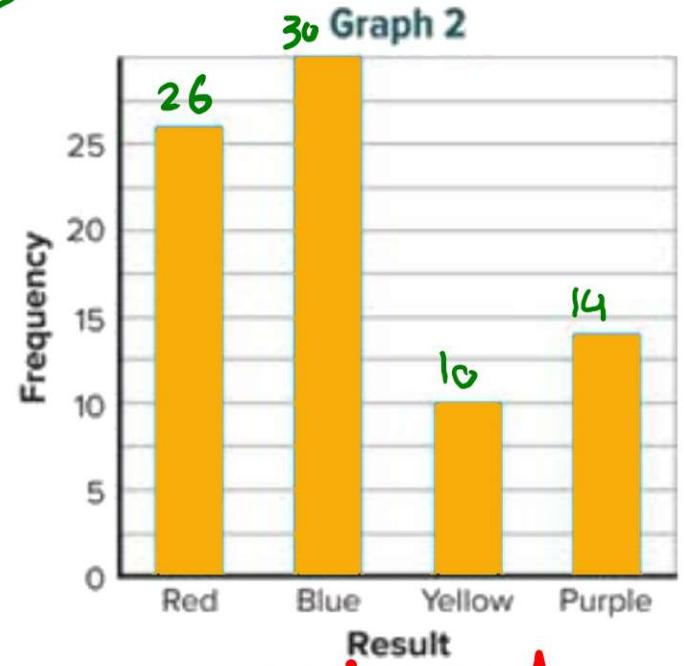
$P(\text{Red}) = \frac{20}{80} = \frac{1}{4} = 0.250$ ✓
 $P(\text{Blue}) = \frac{17}{80} = 0.212$ ✓
 $P(\text{Yellow}) = \frac{22}{80} = 0.275$ ✓
 $P(\text{purple}) = \frac{21}{80} = 0.262$ ✓

$P(\text{B}) = \frac{1}{4}$
 $P(\text{Red}) = \frac{1}{4}$
 $P(\text{Y}) = \frac{1}{4}$
 $P(\text{P}) = \frac{1}{4}$

Blue Red
 Yellow purple



Spinner 2



Spinner 1

Graph ②

$P(\text{Red}) = \frac{26}{80} = 0.325$
 $P(\text{Blue}) = \frac{30}{80} = 0.375$
 $P(\text{Yellow}) = \frac{10}{80} = 0.125$
 $P(\text{Purple}) = \frac{14}{80} = 0.175$

Part (2): 10 MCQ (5 marks per question)

Outcome: compare relative frequencies to theoretical probabilities.

Textbook #545 questions 1-7

- 5) A coin is tossed 30 times. It lands on heads 10 times. Find the experimental probability and theoretical probability of tossing heads. Are the probabilities close?



Sample space $\{H, T\}$

$$P(H) = \frac{1}{2}$$

$$P(T) = \frac{1}{2} = 0.5$$

The Theoretical probability is greater than the experimental probability.

experimental probability

$$P(H) = \frac{10}{30} = \frac{1}{3} \\ = 0.33333 \\ \approx 0.\bar{3}$$

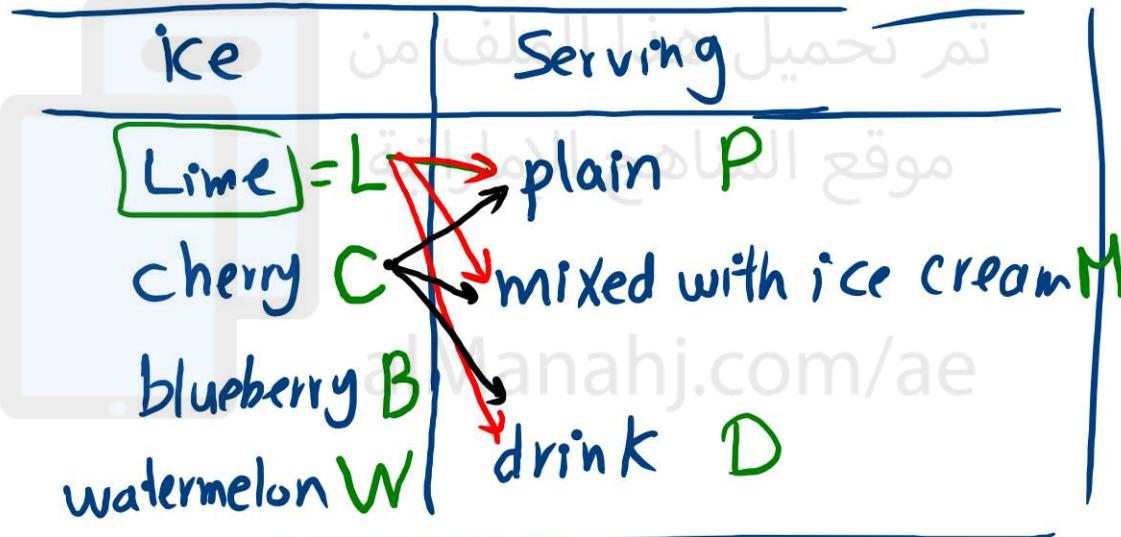
they are not close.

Part (1): 10 MCQ 3marks per question

Outcome: Use organized lists, tables, or tree diagrams to find the sample space and probability of a compound event

Textbook #557 questions 1-5

- 1) An Italian ice shop sells Italian ice in four flavors: lime, cherry, blueberry, and watermelon. The ice can be served plain, mixed with ice cream, or as a drink. **Using an organized list or table, what is the sample space of possible outcomes**



LP
LM
LD
CP
CM
CD
BP
BM
BD

WP
WM
WD

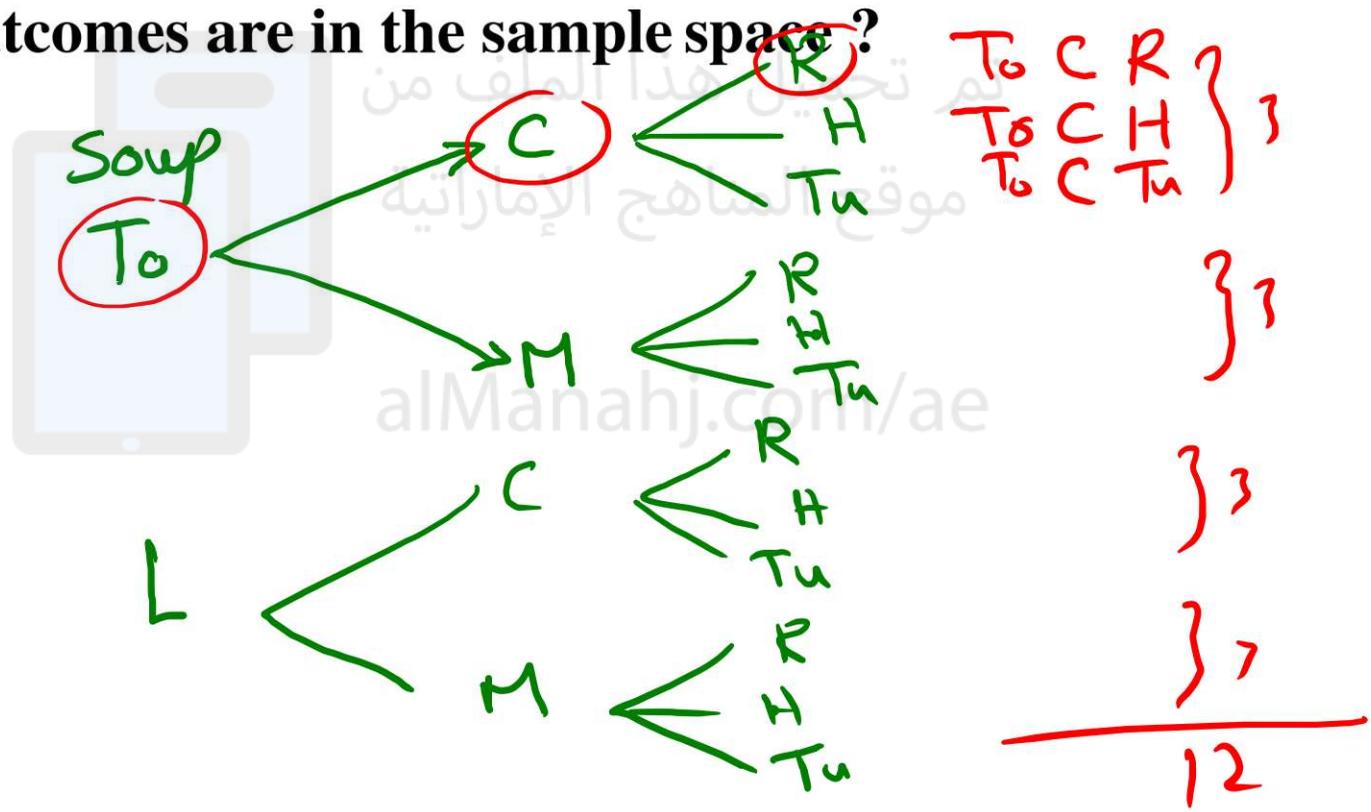
Part (1): 10 MCQ 3marks per question

Outcome: Use organized lists, tables, or tree diagrams to find the sample space and probability of a compound event

Textbook #557 questions 1-5

2) A deli offers a lunch consisting of a soup, salad, and sandwich from the menu shown in the table. A customer randomly chooses lunch consisting of a soup, salad, and sandwich. Construct and use a tree diagram to determine the sample space of the event. **How many possible outcomes are in the sample space?**

	Soup	Salad	Sandwich
To	Tortellini	Caesar	Roast Beef
L	Lentil	Macaroni	Ham
			Turkey



Number of outcomes
 $= 2 \times 2 \times 3$
 $= 12$

Part (1): 10 MCQ 3marks per question

Outcome: Use organized lists, tables, or tree diagrams to find the sample space and probability of a compound event

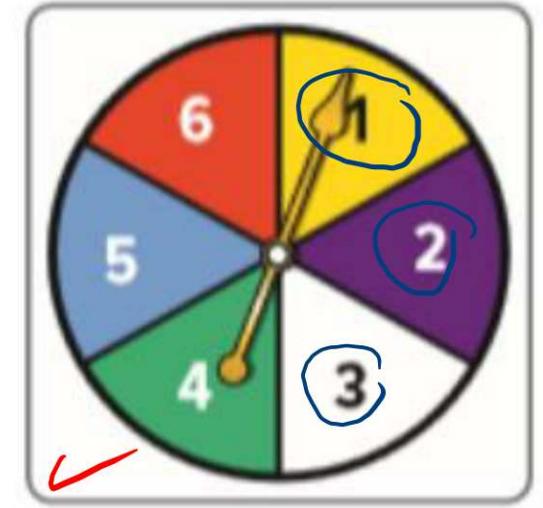
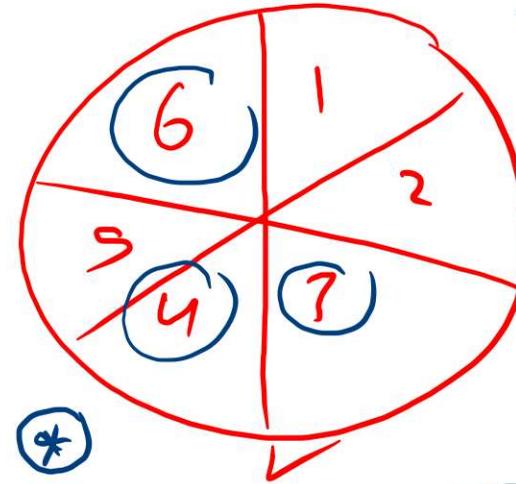
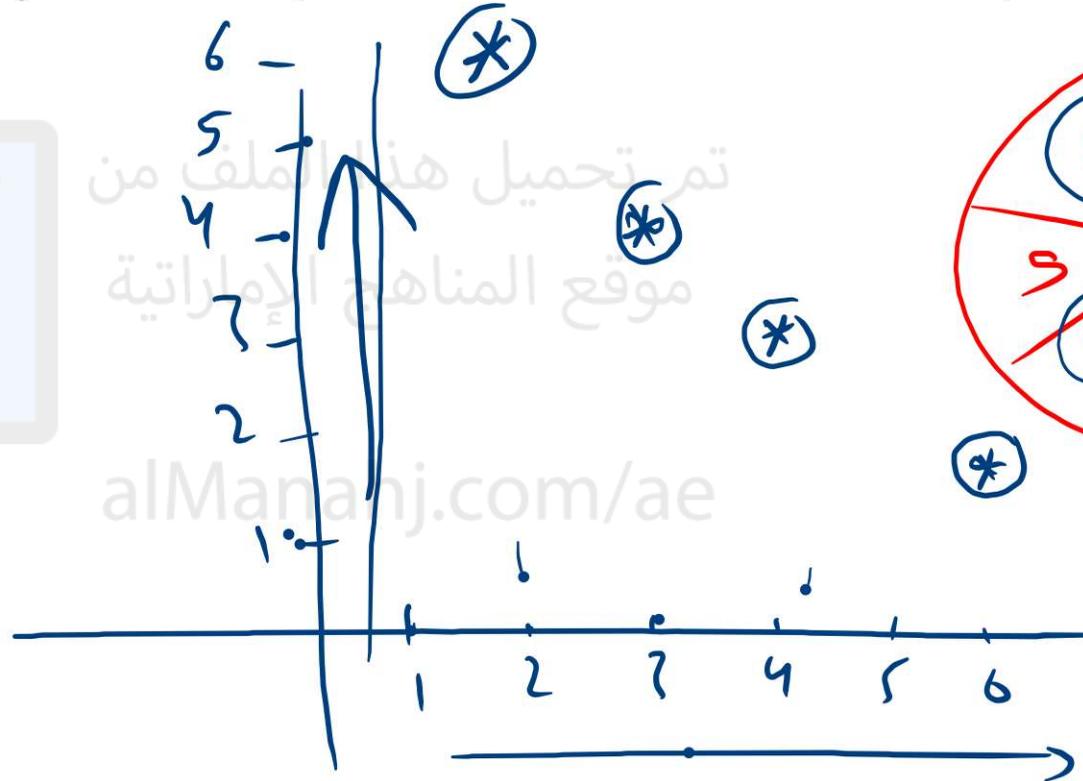
Textbook #557 questions 1-5

3) The spinner shown has six equal-size sections and is spun twice. What is the probability that the product of the numbers spun is 12?

$$\frac{4}{36} = \frac{1}{9}$$

$$= \frac{1}{9}$$

$$= 0.1111$$
$$= 0.\bar{1}$$



1. (2, 6), (3, 4), (4, 3), (6, 2)

Part (1): 10 MCQ 3marks per question

Outcome: Use organized lists, tables, or tree diagrams to find the probability of a compound event

Textbook #557 questions 1-5

4) A number from 0 to 9 is randomly selected and then a letter from A to D is randomly selected. **What is the probability that the number 3 and a consonant are selected**

Numbers: 0, 1, 2, **3**, 4, 5, 6, 7, 8, 9 عدد الأرقام 10

Letters: ~~A~~, **B**, **C**, **D** 4

3B, 3C, 3D ←

Numbers of outcomes = $10 \times 4 = 40$

$$P(3 \text{ and Consonant}) = \frac{3}{40} = 0.075$$

5) Lorelei tosses a coin 4 times. **What is the probability of tossing four heads?** Express as a percent

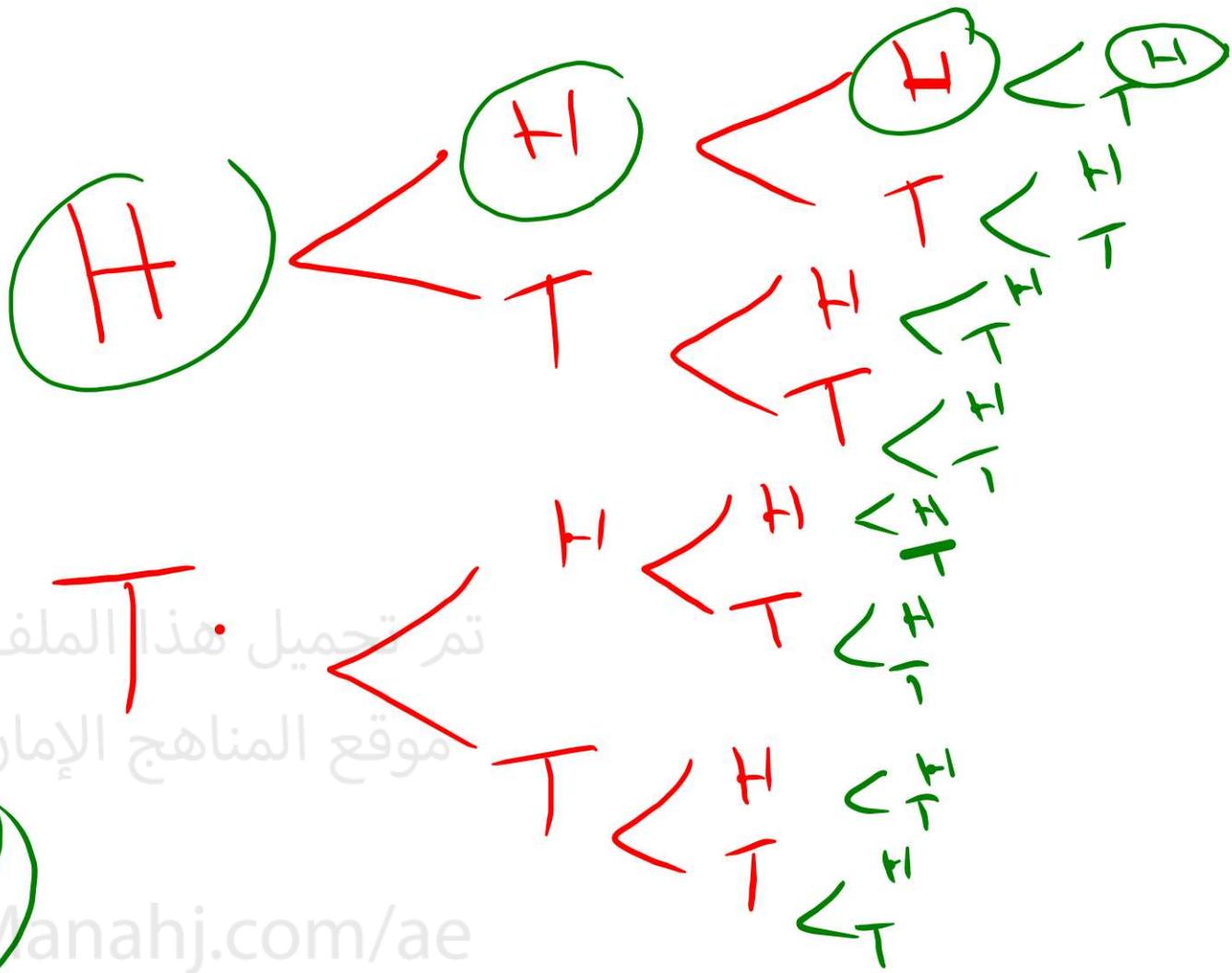
$\left(\frac{H}{T}\right) \left(\frac{H}{T}\right) \left(\frac{H}{T}\right) \left(\frac{H}{T}\right)$ number of outcomes
 $2 \times 2 \times 2 \times 2 = 16$

$\left(\frac{H}{H}\right) \left(\frac{H}{H}\right) \left(\frac{H}{H}\right) \left(\frac{H}{H}\right)$
 $1 \times 1 \times 1 \times 1 = 1$

$$P(HHHH) = \frac{1}{16} = 0.0625 = 6.25\%$$

$$16 \overline{) 100} \begin{array}{r} 0.0625 \\ \underline{96} \\ 40 \\ \underline{32} \\ 80 \end{array}$$

H H H H
H H H H



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Part (2): 10 MCQ (5 marks per question)

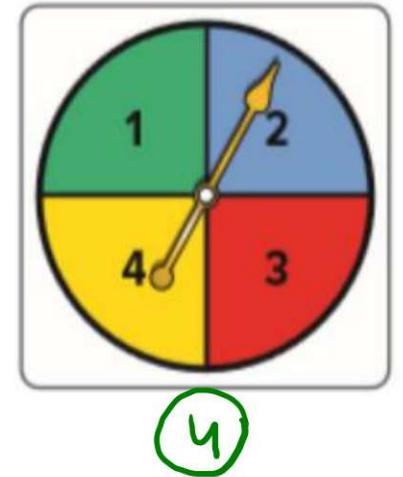
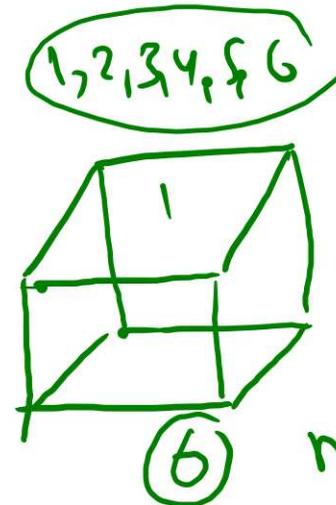
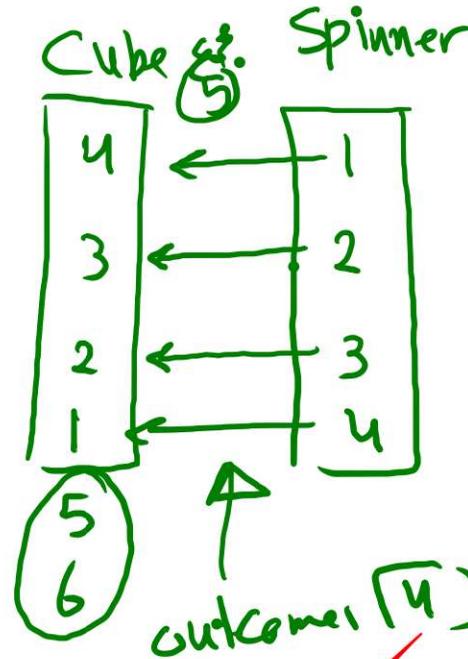
Outcome: Use organized lists, tables, or tree diagrams to find the sample space, of a compound event. **Textbook #558 questions 6-11**

6) A number cube labeled 1 through 6 is rolled and the spinner shown is spun once. The spinner has four equal-size sections. This experiment is repeated 60 times. The relative frequency for getting a sum of 5 was $\frac{1}{5}$. What is the difference between the number of expected outcomes and the number of actual outcomes?

experimental probability = $\frac{1}{5} \times 2$
 = 0.2

Theoretical probability = $\frac{4}{24} = \frac{1}{6}$
 ≈ 0.166
 $\approx 0.1\bar{7}$

Difference = $\frac{1}{5} \times 6 - \frac{1}{6} \times 5$
 = $\frac{6}{30} - \frac{5}{30} = \frac{1}{30}$



number of outcomes,
 = 6×4
 = 24 ✓

$\frac{1}{30} \times 60 = 2$

Part (2): 10 MCQ (5 marks per question)

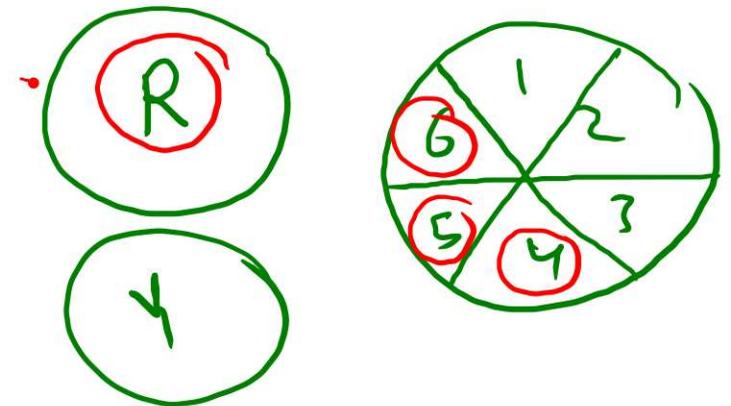
Outcome: Use organized lists, tables, or tree diagrams to find the sample space, of a compound event. **Textbook #558 questions 6-11**

7) Olivia tosses a two-sided counter and then spins a spinner with six equal-size sections labeled 1 through 6. One side of the counter is red. The other side is yellow. She performs this experiment 80 times. The relative frequency of tossing red and spinning a number greater than three was 2/5. **What is the difference between the number of expected outcomes and the number of actual outcomes?**

$$P(\text{actual}) = \frac{3}{12} = \frac{1}{4} \quad \frac{1}{4}(80) = 20$$

$$\text{Experimental} = \frac{2}{5} \quad \frac{2}{5}(80) = 32$$

difference between Number of expected outcomes and the Number of actual outcomes
 $= 32 - 20 = 12$



R4, R5, R6 (3) outcomes,
 Number of outcomes = $2 \times 6 = 12$

Part (3): 3 FRQ (6 to 8 marks per question) Show your steps

Outcome: Use organized lists, to find the sample space and probability of a compound event **Textbook #552,553 Examples 3,4**

Ex.3) Two number cubes labeled 1 through 6 are rolled, what is the probability of rolling a sum of 9?



total Number of outcomes
 $= 6 \times 6 = 36$

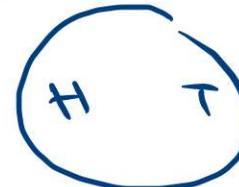
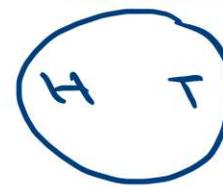
$\{1, 2, 3, 4, 5, 6\}$

$\{1, 2, 3, 4, 5, 6\}$

number of favorable outcomes
 $= 4$

$$P(\text{Sum} = 9) = \frac{\text{number of favorable outcomes}}{\text{total number of outcomes}} = \frac{4}{36} = \frac{1}{9}$$

Ex.4) Two coins are tossed and a number cube labeled 1 - 6 is rolled. **What is the probability of tossing heads at least once, and rolling an even number?**



total outcomes

$$2 \times 2 \times 6 = 24$$



even numbers $\{2, 4, 6\}$ outcomes (3)

favorable outcomes $= 3 \times 3 = 9$
 Probability $= \frac{9}{24} = 0.375$