مجلس

تعليم
مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT

Grade 7 Advanced
Term 3 Revision
2023-2024

EoT3 Exam Coverage

Module 9 - 11

Mathematics/Reveal

Al Soqoor School

مجلس

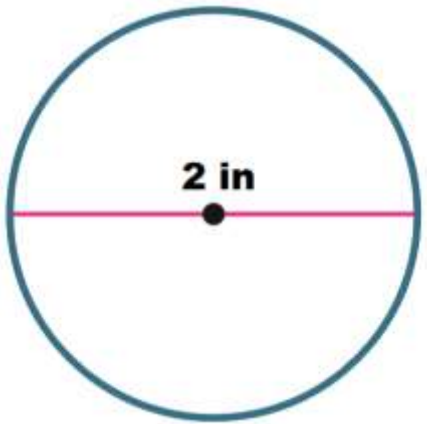
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EMIRATES SCHOOLS ESTABLISHMENT

Part (1)

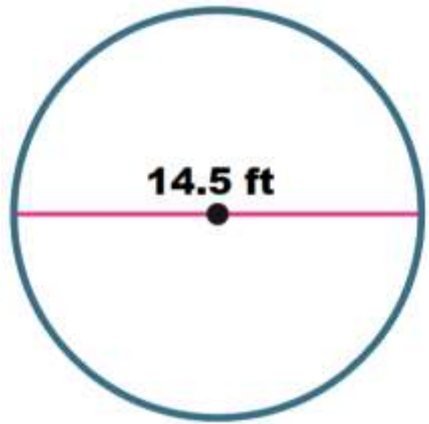
15 questions

Marks of MCQ 4

1. Find the circumference of the watch face. Use 3.14 for π. Round to the nearest hundredth if necessary.



2. A circular fence is being used to surround a dog house. How much fencing is needed to build the fence? Use 3.14 for π. Round to the nearest hundredth if necessary.



3. Find the circumference of a circle with a radius of $31\frac{1}{2}$ yards. Use 3.14 for π. Write your answer as a decimal rounded to the nearest hundredth.

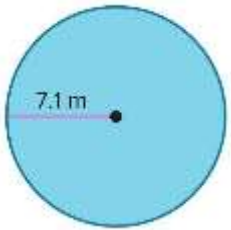
4. Find the circumference of a circle with a radius of 4.4 inches. Use 3.14 for π. Round to the nearest hundredth if necessary.

5. The world's largest flower, the Rafflesia, has a circumference of 286 centimeters. Find the approximate diameter of the flower. Use 3.14 for π. Round to the nearest hundredth if necessary.

6. A helicopter pad has a circumference of $47\frac{1}{2}$ yards. Find the approximate diameter of the helicopter pad. Use 3.14 for π. Write your answer as a decimal rounded to the nearest hundredth if necessary.

7. Find the approximate radius of a circle with a circumference of 34.48 inches. Use 3.14 for π. Round to the nearest hundredth.

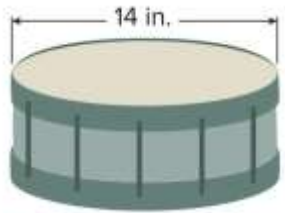
1. What is the area of one side of the penny? Use 3.14 for π. Round to the nearest hundredth if necessary.



2. Find the area of the circle. Use 3.14 for π. Round to the nearest hundredth if necessary.



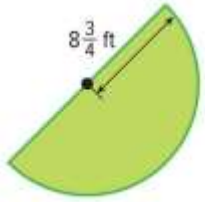
3. What is the area of the drumhead on the drum? Use 3.14 for π. Round to the nearest hundredth if necessary.



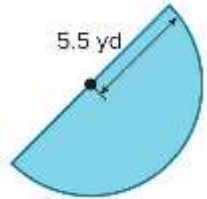
4. Find the area of the circle. Use 3.14 for π. Round to the nearest hundredth if necessary.



5. Mr. Ling is adding a pond in the shape of a semicircle in his backyard. What is the area of the pond? Use 3.14 for π. Round to the nearest hundredth if necessary.



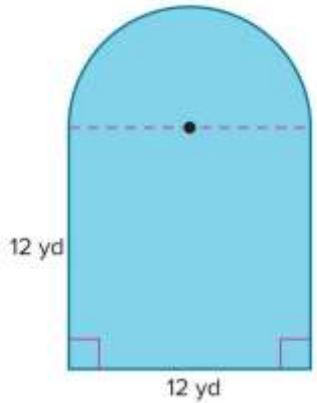
6. Vidur needs to buy mulch for his garden. What is the area of his garden? Use 3.14 for π. Round to the nearest hundredth if necessary.



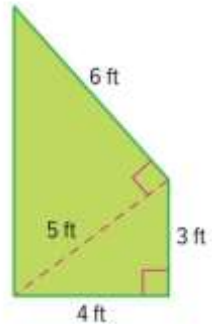
7. The exact circumference of a circle is 18π inches. What is the approximate area of the circle? Use 3.14 for π. Round to the nearest hundredth if necessary.

Find the area of each figure. If necessary, use 3.14 for π and round to the nearest hundredth.

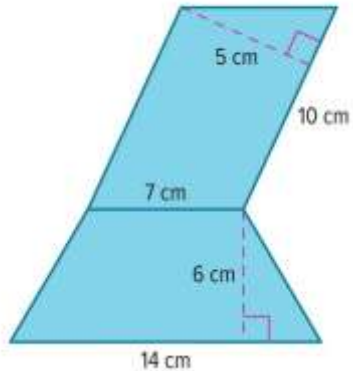
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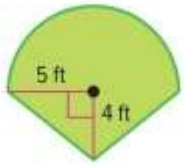


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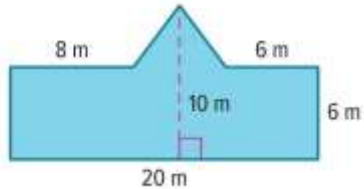


Find the area of each figure. If necessary, use 3.14 for π and round to the nearest hundredth.

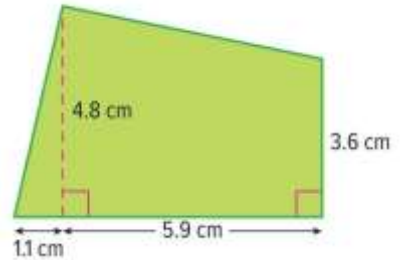
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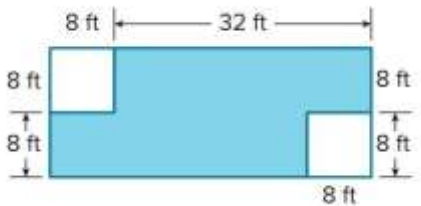
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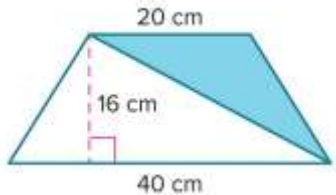
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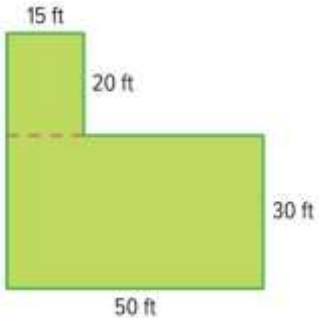
7. Find the area of the shaded region.



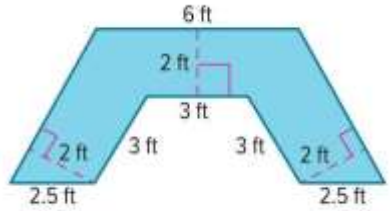
8. Find the area of the shaded region.



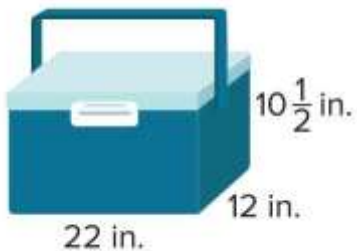
9. Alonzo needs to sod his backyard. The figure shows the measurements of the area of his yard which he intends to sod. One pallet of sod covers 400 square feet. How many full pallets of sod will Alonzo need to have enough for his entire yard?



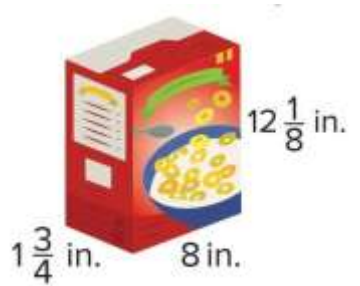
10. Ward is planning to install a new countertop in his kitchen, as shown in the figure. The new countertop costs $42.50 per square foot. What will be the cost of the new countertop?



1. A cooler is in the shape of a rectangular prism. What is the volume of the cooler? Round to the nearest tenth if necessary.

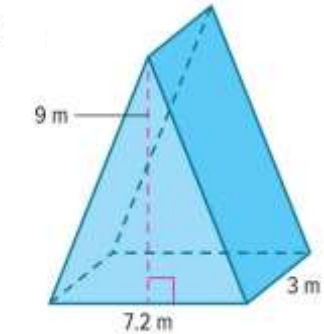


2. prism. What is the volume of the cereal box? Express your answer as a decimal rounded to the nearest tenth if necessary.

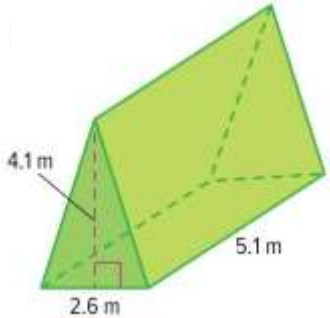


Find the volume of each figure. Round to the nearest tenth if necessary.

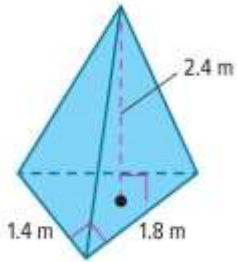
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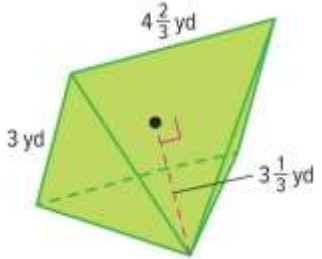
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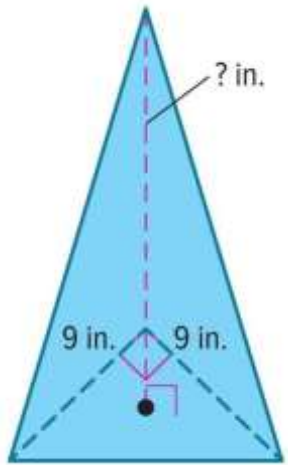
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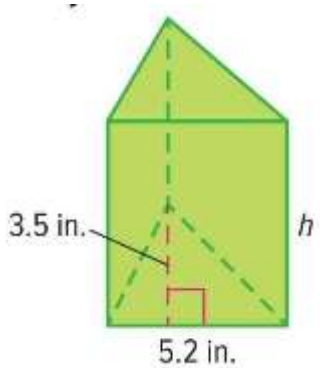
7. A triangular prism has a height of 5.9 meters and volume of 86.376 cubic meters. What is the area of the base of the prism?

8. A rectangular pyramid has a height of 9.5 centimeters and a volume of 494 cubic centimeters. What is the area of the base of the pyramid?

9. A glass stand to display a doll is in the shape of a right triangular pyramid as shown. The volume of the stand is 202.5 cubic inches. What is the height of the stand?

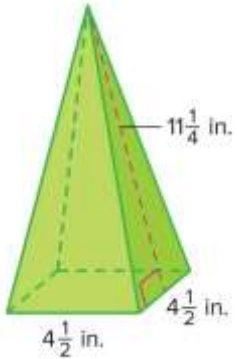


10. A triangular box of sticky notes is shown. The volume of the box of sticky notes is 54.6 cubic inches. What is the height of the box of sticky notes?

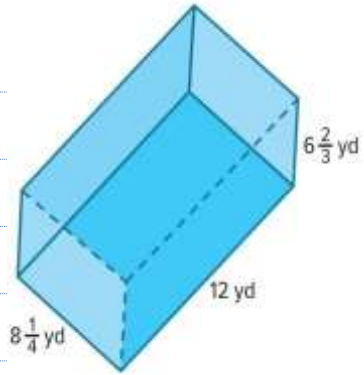


Find the surface area of each figure. Round to the nearest tenth if necessary.

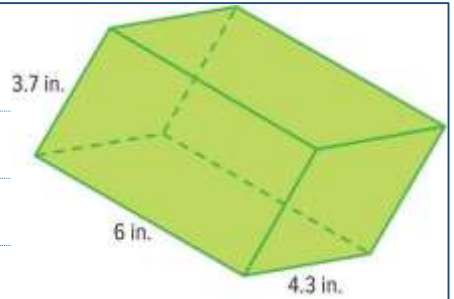
Ex3.



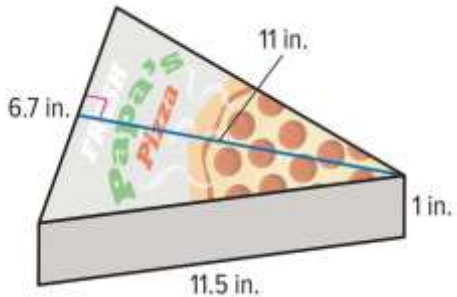
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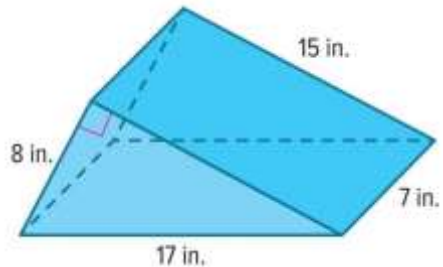
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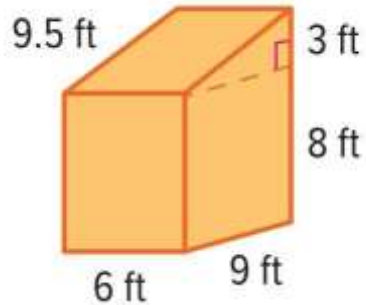
3. How much cardboard is needed to make the single slice of pizza box shown?



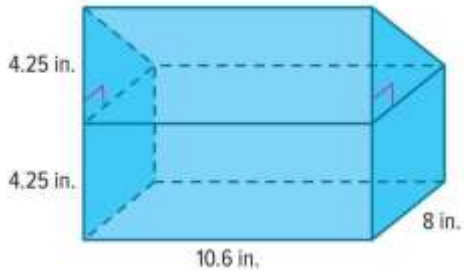
4. What is the surface area of the triangular prism-shaped toy car ramp shown?



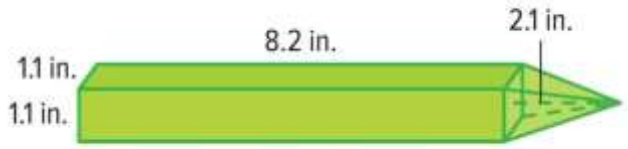
Learn: Find the surface area of the composite figure.



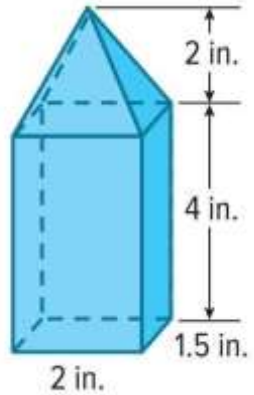
1. Mya's lunchbox is shown. What is the volume of the lunchbox? Round to the nearest tenth if necessary.



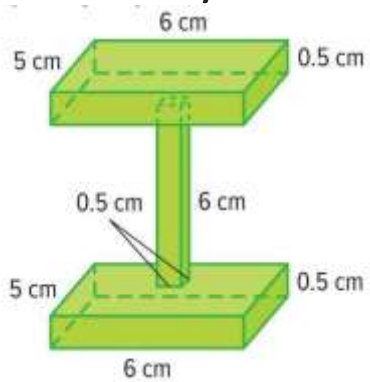
2. Anson's toy rocket is shown. What is the volume of the rocket? Round to the nearest tenth if necessary.



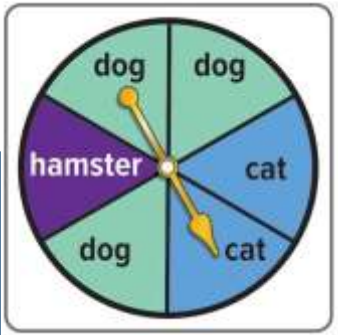
3. What is the volume of the birdfeeder? Round to the nearest tenth if necessary.



4. Zahir made this wooden perch for his pet bird. What is the volume of the bird perch? Round to the nearest tenth if necessary.



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

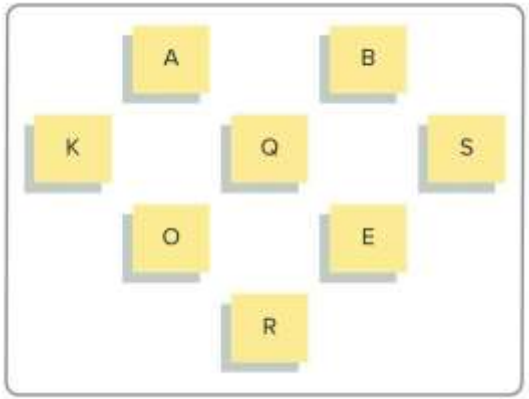


1. the spinner landing on dog.	**2.** the spinner landing on hamster.	**3.** the spinner landing on dog or cat.
4. the spinner landing on bird.	**5.** the spinner landing on an animal.	**6.** the spinner landing on cat or hamster.

For Exercises 7 and 8, a card is randomly selected from the ones shown.

7. Select all events that are unlikely to happen.

- ❑ selecting the letter B.
- ❑ selecting the letter T.
- ❑ selecting a vowel or S.
- ❑ selecting a consonant or vowel.
- ❑ selecting a consonant or A.
- ❑ selecting the letter Q or R.



8. Select all of the following events that are equally likely to happen as not to happen.

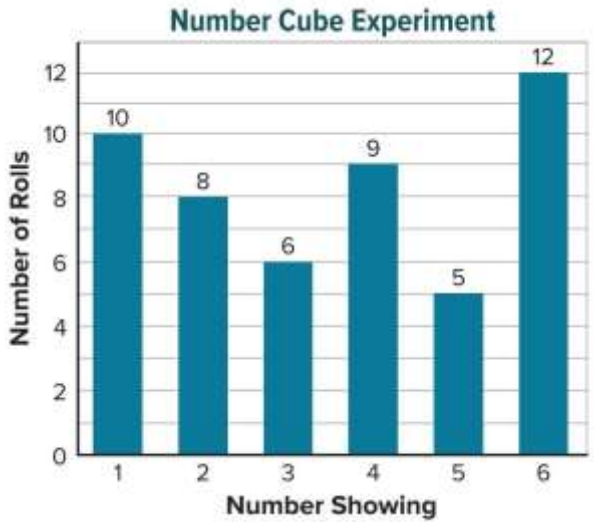
- ❑ selecting the letter B.
- ❑ selecting the letter E.
- ❑ selecting a vowel or S.
- ❑ selecting a consonant or vowel.
- ❑ selecting a consonant or A.
- ❑ selecting the letter Q, R, B, or K.

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?

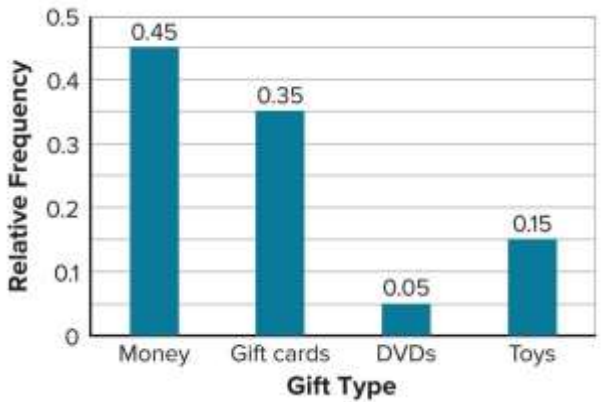
2. The frequency table shows the results of a survey about favorite exhibits. Find the relative frequency that a randomly selected student's favorite exhibit was either butterflies or trains, as a percent.

Exhibit	Frequency
Butterfly	12
Dinosaurs	25
Planets	17
Trains	6

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.**



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?**



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

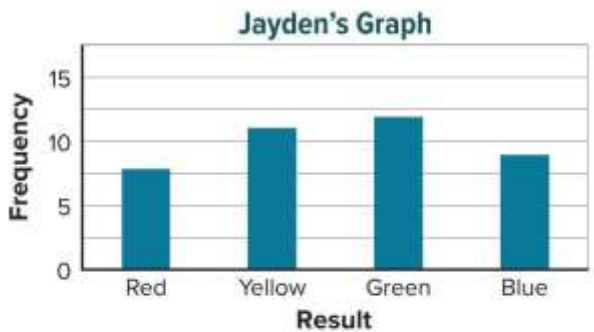


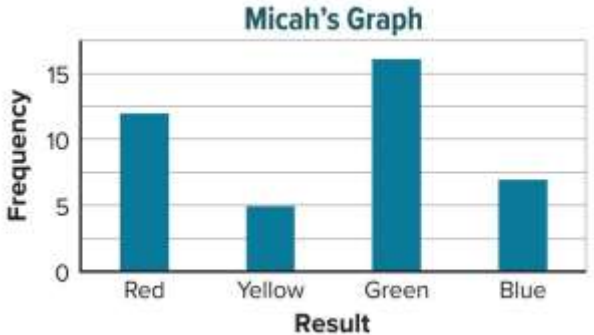
2. Each letter in the word **MISSISSIPPI** is written on a piece of paper and placed into a bag. A letter is drawn at random. What is the sample space?

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.

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.

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 each 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?





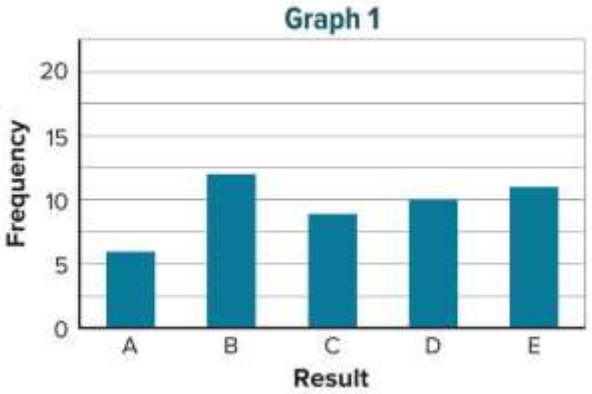
2. Two experiments are conducted and their results are recorded in frequency bar graphs.

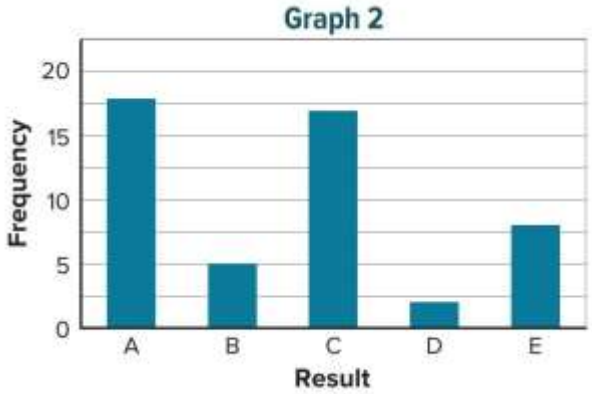
Experiment 1	Experiment 2
A spinner with equal-size sections of A, B, C, D, and E is spun 50 times.	A card is randomly selected from a bag containing five A cards, three B cards, four C cards, one D card, and two E cards. The card is then placed back in the bag. There are 50 trials.

Which graph best represents the results that can be expected from:

Experiment 1?

Experiment 2?





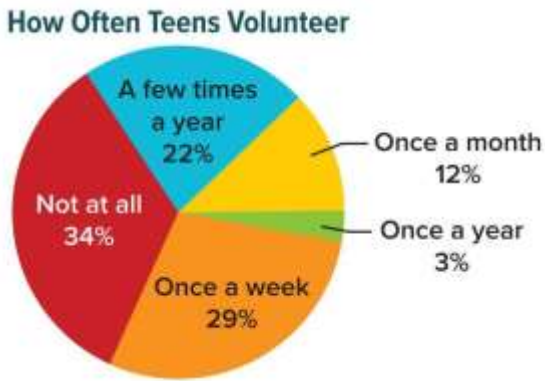
Ex1 A high school athletic director is purchasing equipment for the athletic department in the coming year. In order to determine how much equipment is needed, the director randomly surveys 150 students who plan to participate in athletics in the coming year. The table shows the results.

How many volleyball uniforms should the director purcha
if 500 total students plan to participate in athletics?

Sport Students	Sport Students
Baseball/Softball	36
Basketball 30	30
Football 45	45
Gymnastics 12	12
Tennis 18	18
Volleyball 9	9

Ex2 The superintendent of a school district wants to determine the number of volunteer positions to have available for students. The graph shows the results of a survey where randomly selected teenagers within the district were asked, "How often do you volunteer?"

If the district has 2,000 teenage students, about how many positions should the superintendent have available for students who volunteer once a week?



1. A school librarian is purchasing new books for her book clubs in the coming year. In order to determine how many books she needs, she randomly surveys 25 students who plan to participate in one of her book clubs in the coming year. The table shows the results.

Predict how many science fiction books she will need to purchase if 125 students participate in book club next year.

Book Club Type	Number of Students
Autobiography	2
Graphic Novel	7
Mystery	10
Science Fiction	6

2. A smart tablet manufacturer tests 1 out of every 25 screens for flaws. Out of 125 tablets tested, 2 had defective screens. **How many defective screens should the manufacturer expect out of 45,000 smart tablets?**

3. The superintendent of a school district wants to predict next year's middle school lunch count. The graph shows the results of a survey of randomly selected middle school students. If the district has 5,000 middle school students next year, **about how many students plan to buy lunch 1-2 days a week?**

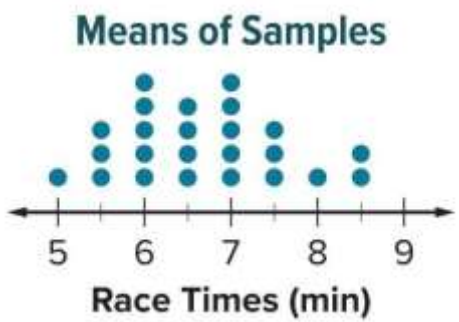


4. The guidance department conducted a random survey of the student body and found that 16% of the students plan to volunteer at the school festival. **Predict how many volunteer positions they should plan for a population of 950 students.**

5. The owner of a travel agency randomly surveyed its customers. The survey showed that 55% of the agency's customers were planning an overseas vacation the following year. **Predict how many of the travel agency's 12,400 travelers will vacation overseas the following year.**

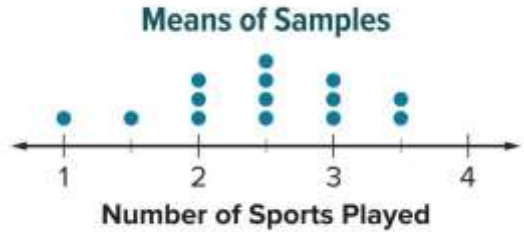
Ex1 The dot plot shows the means of 24 random samples of 20 runners' times, across local high schools, for a one-mile race. Each dot represents the mean of one random sample.

Which race time is the best estimate of the population mean?



Find and interpret the variability in the distribution.

1. The dot plot displays data from 14 random samples, each consisting of 30 middle school students. Each dot represents the mean number of sports played per year by students in the sample.

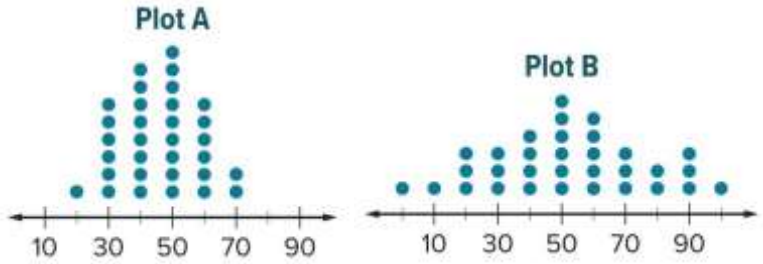


a. Which number best represents the mean number of sports played by middle school students?

b. Find and interpret the variability in the distribution.

2. Below are two dot plots containing sample means from the same population.

A. How many samples are represented in each plot?
How do you know?



B. Which dot plot has higher variability? Defend your answer.

C. One plot contains samples of size 25, and the other plot contains samples of size 60. Which dot plot contains the samples of size 60? How do you know?

مجلس

تعليم

مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT

Part (2)

5 questions

Marks per FRQ (6-10)

9. Tye has a square piece of yellow felt that has an area of 81 square inches. She wants to cut the largest circle possible from the material to create a sun for her art project. What is the area of the felt circle? Use 3.14 for π. Round to the nearest hundredth if necessary.

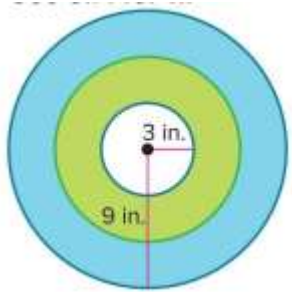
10. Tarek has 72 feet of plastic fencing to make a flower garden in his backyard. The garden shape can either be circular or square. If he uses all of the fencing, what is the difference between the area of the circular garden and the square garden? Use 3.14 for π. Round to the nearest hundredth if necessary.

11. Explain how you could find the area of the three-quarter circle shown. Then write a formula that could be used to find the area of the three-quarter circle and use the formula to find the area of the figure. Use 3.14 for π.

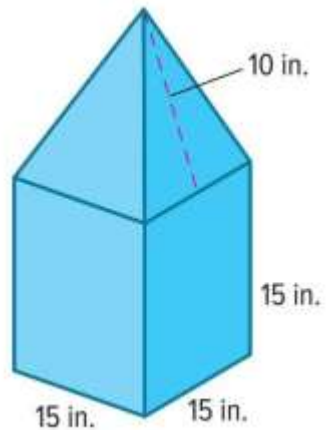


12. Draw and label a circle with an area between 50 and 60 square inches.

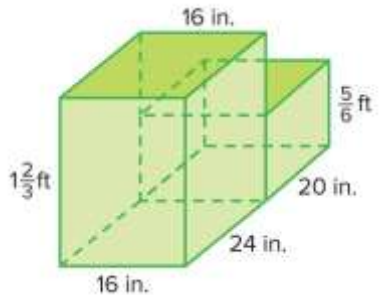
13. The bullseye on an archery target has a radius of 3 inches. The entire target has a radius of 9 inches. To the nearest hundredth, find the area of the target outside of the bullseye. Use 3.14 for π.



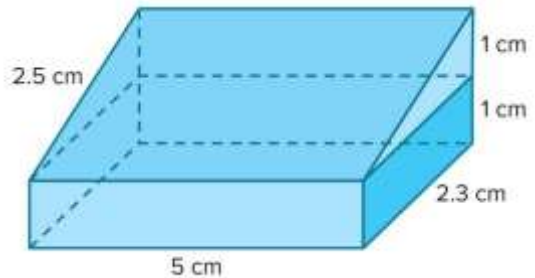
7. For a charity drive, each classroom is given a coin box made of cardboard like the one shown. The student council wants to construct a version of the coin box that has scale factor of 3 times the classroom coin box. Is 100 square feet of cardboard enough to build the new coin box? Write an argument that can be used to defend your solution.



8. Jake wants to buy the foam gymnastic block shown. If the foam used to make the gymnastic block costs $24.99 per cubic foot, what is the cost of this block, to the nearest dollar?



9. student said that the surface area of the solid below was 57.4 square centimeters. Is the student correct? Explain.



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? Describe the complement.

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

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? Describe the complement.**

7. A sportscaster predicted that the local high school baseball team has a 75% chance of winning tonight. Select all of the values that represent the probability of the team not winning.

- ❑ 0.75
- ❑ 25%
- ❑ 0.25
- ❑ $\frac{3}{4}$
- ❑ 75%
- ❑ $\frac{1}{4}$

8. A pet store is having a prize give-away. The spinner shows the type of toy a customer can win for their pet. If a customer spins the spinner and it lands on cat, they will win a free cat toy. If the spinner is spun 540 times throughout the day, about how many dog or cat toys are expected to be given away?

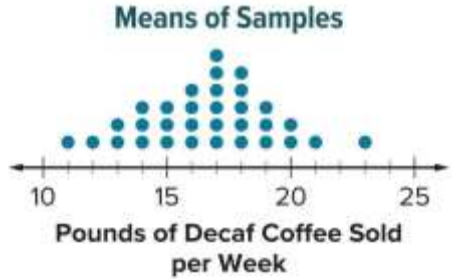


9. The letters from the word **FOOTBALL** are written on 8 cards with one letter on each card. One card will be drawn randomly and then placed back into the stack. If this experiment is repeated 840 times, about how many times should you expect to draw a consonant?

Apply Ten years ago, researchers randomly gathered 8 samples of 100 manatees each, and recorded their weights. This year, they repeated the experiment with 8 different samples of the same size. The table shows the mean weights of these samples. Can the researchers infer that the weight of the manatee population has less variation this year than from ten years ago? Explain your reasoning.

Sample	Ten Years Ago Mean Weight (lb)	This Year Mean Weight (lb)
1	944	937
2	980	943
3	1,025	897
4	962	1,000
5	886	963
6	872	985
7	1,052	964
8	975	999

3. A large company is trying to determine the mean number of pounds of decaf coffee sold per week in its stores. The dot plot shows the mean pounds of decaf coffee sold per week from 32 samples of 50 stores each.

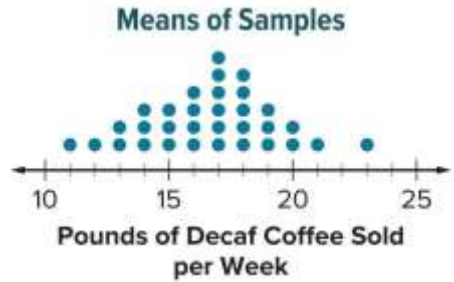


a. Describe the variability of the dot plot.

b. How might the dot plot be different if each of the 32 samples contained data from 200 stores?

3. A large company is trying to determine the mean number of pounds of decaf coffee sold per week in its stores. The dot plot shows the mean pounds of decaf coffee sold per week from 32 samples of 50 stores each.

c. The company randomly samples 50 of its stores and records the pounds of decaf sold per week for each store. A mean sale of 18 pounds of decaf coffee per week is calculated from this sample. Based on the sample mean of 18 and the variability observed in the dot plot, what range of values could be used to describe the population mean?



d. The company samples 200 stores and finds a mean of 17 pounds of decaf coffee sold per week. Based on your answer to Part B, what range of values might describe the mean for all stores in the company? Justify your answer.

4. Find the Error A student examines the dot plot below and states that it contains samples of size 30. Find the student's mistake and correct it.

