Pre-Algebra: Week of April 20 – 24, 2020

Time Allotment: 40 minutes per day

Student Name: _____

Teacher Name: _____

Academic Honesty

I certify that I completed this assignment independently in accordance with the GHNO Academy Honor Code.

Student signature:

_____

I certify that my student completed this assignment independently in accordance with the GHNO Academy Honor Code.

Parent signature:

_____

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Packet Overview

Date	Objective(s)	Page Number
Monday, April 20	Utilize area formulas to determine the probability of selecting a random point within various geometric shapes.	2
Tuesday, April 21 & Wednesday, April 22	Demonstrate proficiency in solving problems that involve basic counting principles (permutations and combinations), basic probabilities, odds in favor and against, and events that are mutually exclusive, overlapping, independent, or dependent.	2
Thursday, April 23	Demonstrate proficiency in solving problems that involve basic counting principles (permutations and combinations), basic probabilities, odds in favor and against, and events that are mutually exclusive, overlapping, independent, or dependent. ***Quiz***	4
Friday – April 24	***No School***	16

Additional Notes: Thank you students for all your hard work and commitment to Pre-Algebra.

Email: Patrick.Franzese@greatheartsnorthernoaks.org or Melisa.Walters@greatheartsnorthernoaks.org

Please create an "Exercise Packet" which is to include all your work and completion of these daily exercises. Each day is to have a title with the date followed by the name of the lesson. Please include a title page and staple all the completed exercises. **You can either drop-off your completed work or upload it to Google Classroom!**

Remember Zoom "Office Hours"! As a reminder, this means during the designated times below you can contact us to ask questions, go over problems etc… For example, if you had Pre-Algebra with Mrs. Walters during Period 5, then on Tuesday and Thursday from 11-11:50 you can connect with her via Zoom. More details to follow on specific links, access codes and etiquette. Note, however, you can email at any time!! We appreciate all of you. Have a great week!

	Monday	Tuesday	Wednesday	Thursday
10-10:50	Period 1	Period 4	Period 1	Period 4
11-11:50	Period 2	Period 5	Period 2	Period 5
11:50-1	Break			
1-1:50	Period 3	Period 6	Period 3	Period 6

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<u>**Monday, April 20**</u>

Pre-Algebra: Chapter 11
Lesson: Geometry and Probability

Objective: Utilize area formulas to determine the probability of selecting a random point within various geometric shapes.

Lesson Recap: During our studies of probability, we have seen how determining the probability of a given event requires us to draw on our knowledge of ratios and proportions. We can further utilize our knowledge of ratios and proportions to apply the concept of probability in determining the likelihood of randomly selecting certain points within various geometric shapes.

Overview: In events that involve a finite number of possibilities, probability is a simple process of counting possibilities for success and total possibilities. For example, the probability of rolling an even number on a six-sided die is ½ because there are six total possibilities (1, 2, 3, 4, 5, and 6) and 3 possibilities for "success" (2, 4, and 6).

However, when considering probabilities that involve *areas*, we need a different strategy. For example, what is the probability of a random point selected from within the square to also be located within the circle? This is the same as asking for the probability of a random dart throw at the square to hit the circle.
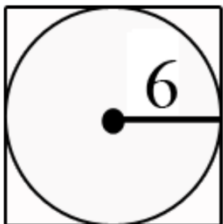
Because there are an infinite number of points in the square (and in the circle), we cannot simply count possibilities. The result would be infinity divided by infinity. Instead, the probability is found by dividing the *area* of success by the total area. In this case, the total area is 144 because the length of the side of the square is 12. The Area of success is the area of the circle, which is $\pi(6^2) = 36\pi$. Therefore, the probability of a random point (or dart) hitting the circle is:

$$\frac{36\pi}{144} \approx 78.5\%$$

We could also ask the probability of *not* hitting the circle with a random point. We can use the same strategy. The area outside the circle (but inside the square) is $144 - 36\pi$. Therefore, the probability is:

$$\frac{144 - 36\pi}{144} \approx 21.5\%$$

Of course, we could have also calculated this by subtracting the first probability from 100%:
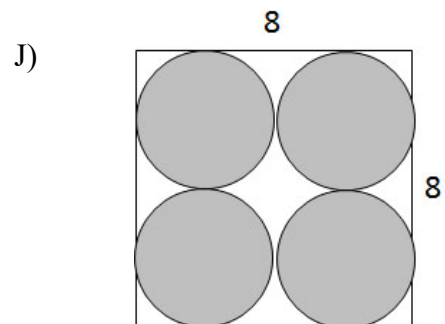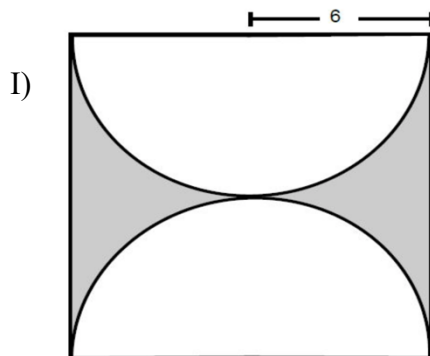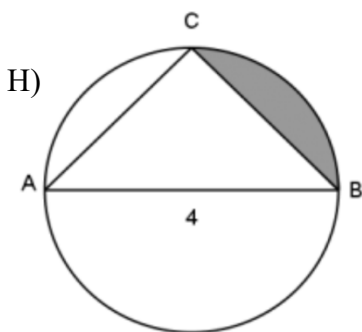
$100\% - 78.5\% = 21.5\%$

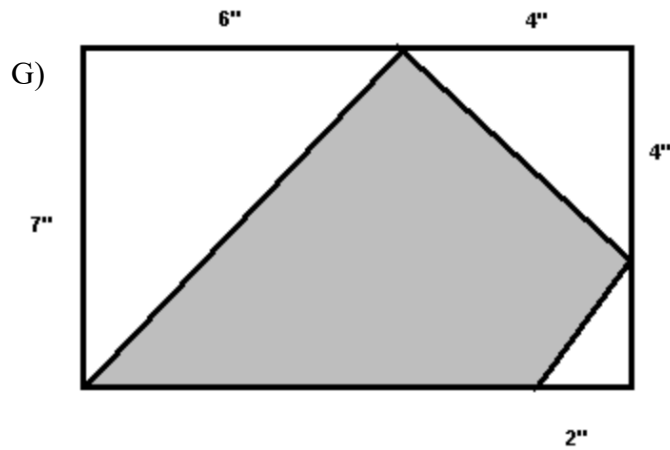**GreatHearts**®

Exercises

Find the probability of a random point that is dropped on the shape landing in the shaded region. You can use calculators! For each problem, write the:

(a) Total Area;
(b) Probability as a Fraction; and
(c) Probability as a Percent

A)

B)

C)

D)

E)

F)

G)

H)

I)

J)

3

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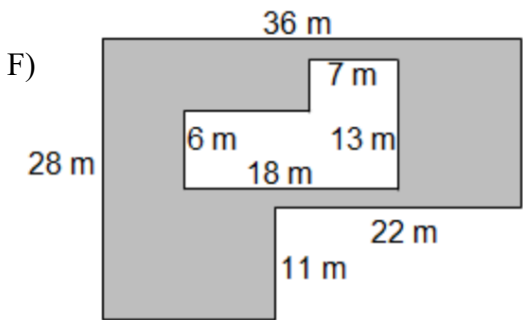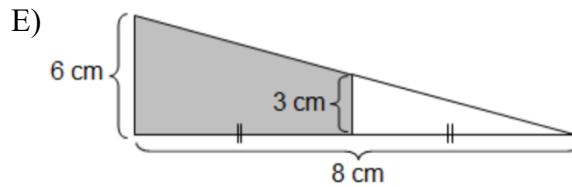
Tuesday, April 21, 2020 and Wednesday, April 22, 2020

Pre-Algebra: Chapter 11
Lesson: More Practice

Objective: Demonstrate proficiency in solving problems that involve basic counting principles (permutations and combinations), basic probabilities, odds in favor and against, and events that are mutually exclusive, overlapping, independent, or dependent.

Lesson:

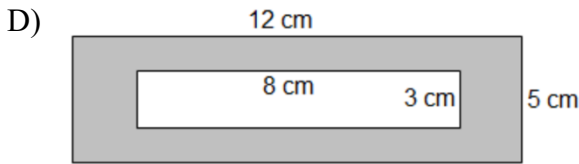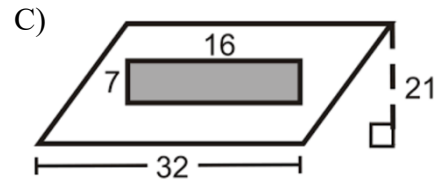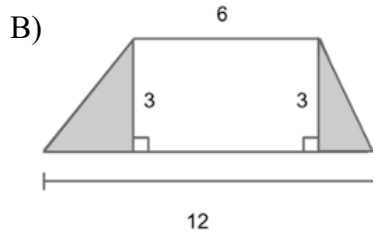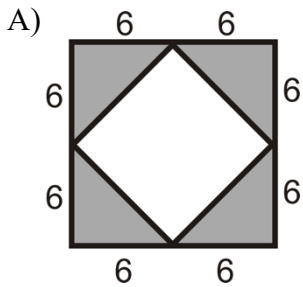While we are unfortunately unable to demonstrate our masterty on the STAAR test this year, we can nonetheless use questions from previous years to do so. Below are 28 problems. All of the, with the exception of the last one, are from previous STAAR tests. Note, we understand that showing work will not be possible on a couple of questions due to the nature of what is being asked. However, for the majority of questions you should show you work to indicate how you arrived at the answer. If you do not know how to do an answer, contact us via e-mail or attend one of our Zoom office hours!

Since these problems constitute two lessons, if it takes you less than 80 minutes, review your notes to prepare for tomorrow's quiz. If still time, work through the odd problems on pgs 436-437…answers in the back of your textbook!

1.	Tara has two bags of marbles. The first bag contains 6 red marbles, 5 blue marbles, and 4 green marbles. The second bag contains 3 red marbles, 2 blue marbles, and 4 green marbles. Tara will randomly select 1 marble from each bag.

What is the probability that Tara will select a blue marble from each bag?

A $\frac{5}{9}$

B $\frac{1}{135}$

C $\frac{1}{6}$

D $\frac{2}{27}$

2.	Rachel is setting up tables for a party. Four of the tables are covered with red tablecloths, and eight of the tables are covered with white tablecloths. Guests will be randomly seated at the tables when they arrive. Each table can seat 8 guests.

What is the probability that the first guest to arrive will be seated at a table with a red tablecloth?

F $\frac{1}{2}$

G $\frac{1}{3}$

H $\frac{1}{4}$

J $\frac{1}{8}$

3. Leticia has two bouquets of flowers. Each bouquet contains 13 daisies.

- Bouquet S contains 30 flowers.
- Bouquet T contains 13 flowers.

Which statement is true?

A The probability of randomly selecting a daisy from Bouquet S is less than the probability of randomly selecting a daisy from Bouquet T.

B The probability of randomly selecting a daisy from Bouquet S is 1.

C The probability of randomly selecting a daisy from Bouquet S is equal to the probability of randomly selecting a daisy from Bouquet T.

D The probability of randomly selecting a daisy from Bouquet S is $\frac{1}{3}$.

4. A board game uses the spinner below.

What is the probability that a player will move an odd number of spaces on their first spin and an even number of spaces on their second spin?

A) $\frac{1}{2}$

B) $\frac{4}{9}$

C) $\frac{1}{9}$

D) $\frac{2}{9}$

5.

The school PTA sponsored an ice cream party for 278 sixth-grade students. They bought ice cream in 3 different flavors: chocolate, vanilla, strawberry, and 2 types of toppings: nuts and hot fudge. Each student chose one flavor of ice cream and one topping. Which tree diagram shows all the possible combinations of ice cream and toppings?

A)

chocolate   vanilla   strawberry
nuts   hot fudge   nuts   hot fudge   nuts   hot fudge

B)

chocolate   vanilla   strawberry
nuts   nuts   hot fudge

C)

chocolate   vanilla   strawberry
nuts   hot fudge   nuts   hot fudge   hot fudge

D)

nuts   hot fudge
chocolate   strawberry   vanilla

6.

Graysen has a green number cube and a white number cube. The faces of the cubes are numbered 1 through 6. Graysen will roll each cube one time. What is the probability that the green cube will land with an even number faceup and the white cube will land with a number greater than 2 faceup?

F $\dfrac{1}{9}$

G $\dfrac{1}{36}$

H $\dfrac{1}{3}$

J $\dfrac{1}{6}$

7.

Karla will select 2 different side dishes from the following list at a restaurant.

- French fries
- Salad
- Onion rings
- Beans

Which list shows all the possible outcomes of 2 different side dishes from this list?

F French fries and salad
  Onion rings and beans

H French fries and salad
  French fries and onion rings
  French fries and beans
  Salad and onion rings
  Salad and beans
  Onion rings and beans

G French fries and salad
  French fries and onion rings
  Salad and beans
  Salad and onion rings
  Onion rings and beans

J French fries and salad
  French fries and onion rings
  Salad and onion rings
  Salad and beans

8.

Fazio is selecting a jersey. His choices are shown below.

Fazio chooses a jersey at random and then replaces it. He then selects a second jersey at random. What is the probability that Fazio selects a striped jersey both times?

F $\dfrac{1}{100}$

G $\dfrac{1}{16}$

H $\dfrac{1}{25}$

J $\dfrac{1}{81}$

9.

The arrow on each spinner shown below will be spun one time.
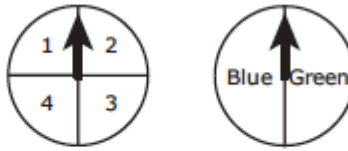
Which of the following diagrams shows all the possible outcomes when each arrow is spun once?

A

1 — 1, 2, 3, 4
2 — 1, 2, 3, 4
3 — 1, 2, 3, 4
4 — 1, 2, 3, 4

B

1 — 2, 3, 4, Blue, Green
2 — 1, 3, 4, Blue, Green
3 — 1, 2, 4, Blue, Green
4 — 1, 2, 3, Blue, Green

C

1 — Blue, Green
2 — Blue, Green
3 — Blue, Green
4 — Blue, Green

D

1 — Blue, Blue
2 — Green, Green
3 — Blue, Blue
4 — Green, Green
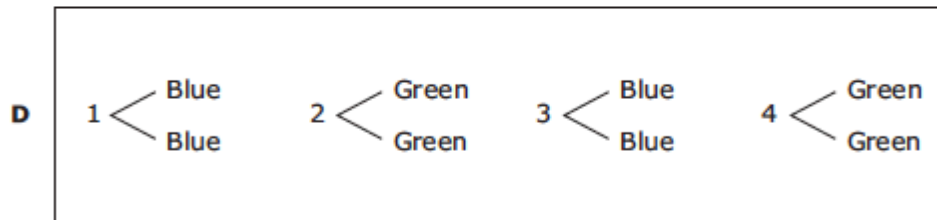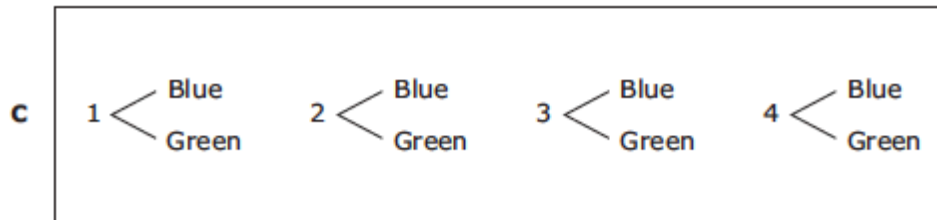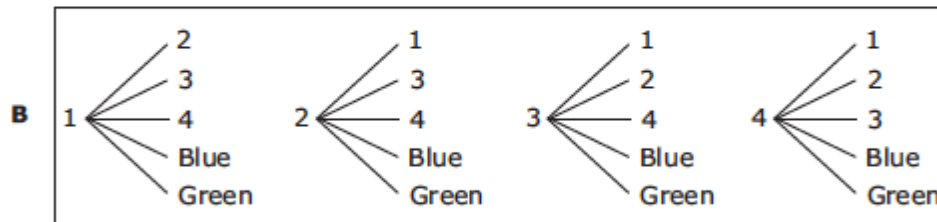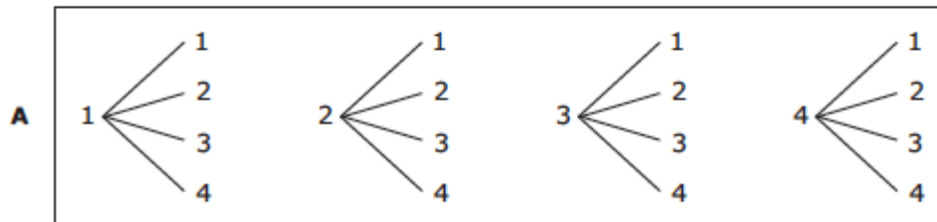
10.

At an assembly 7 out of the first 10 students who entered the gym were carrying a backpack. Based on this information, if 700 students were at the assembly, how many students could be expected to be carrying a backpack?

11.

Bailey will roll a number cube and flip a coin for a probability experiment. The faces of the number cube are labeled 1 through 6. The coin can land on heads or tails. If Bailey rolls the number cube once and flips the coin once, which list contains only the outcomes in which the number cube lands on a number greater than 4?

A   5, Heads
    5, Tails
    6, Heads
    6, Tails

B   5, Heads
    6, Tails

C   1, Heads
    1, Tails
    2, Heads
    2, Tails
    3, Heads
    3, Tails
    4, Heads
    4, Tails
    5, Heads
    5, Tails
    6, Heads
    6, Tails

D   4, Heads
    4, Tails
    5, Heads
    5, Tails
    6, Heads
    6, Tails

12.

A store manager receives a delivery of 2 boxes of lightbulbs. Each box contains 25 lightbulbs. The store manager tests all the lightbulbs and finds that 2 of them are defective. Based on these results, what can the store manager predict about the next delivery of lightbulbs?

F   A delivery of 3 boxes will contain 3 more defective lightbulbs than a delivery of 2 boxes.

G   A delivery of 4 boxes will contain 2 more defective lightbulbs than a delivery of 2 boxes.

H   A delivery of 5 boxes will contain 10 more defective lightbulbs than a delivery of 2 boxes.

J   A delivery of 6 boxes will contain 3 more defective lightbulbs than a delivery of 2 boxes.

13.

Gabriel has these cans of soup in his kitchen cabinet.

- 2 cans of tomato soup
- 3 cans of chicken soup
- 2 cans of cheese soup
- 2 cans of potato soup
- 1 can of beef soup

Gabriel will randomly choose one can of soup. Then he will put it back and randomly choose another can of soup. What is the probability that he will choose a can of tomato soup and then a can of cheese soup?

F $\frac{2}{5}$

G $\frac{2}{45}$

H $\frac{1}{25}$

J $\frac{1}{5}$

14.

A bag contains:

- 5 red marbles
- 6 blue marbles
- 3 green marbles
- 4 black marbles
- 2 yellow marbles

A marble will be drawn from the bag and replaced 100 times. What is a reasonable prediction for the number of times a green or black marble will be drawn?
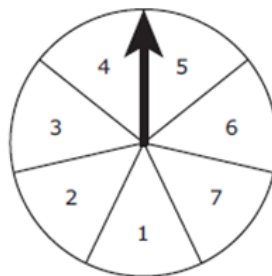
F 14

G 65

H 7

J 35

15.

The spinner shown is divided into congruent sections that are labeled from 1 through 7.

If the spinner is spun one time, what is the probability of the arrow **not** landing on a section labeled with an odd number?

F $\frac{4}{7}$ G $\frac{3}{4}$ H $\frac{1}{4}$ J $\frac{3}{7}$

16.

Felix has a bucket of golf balls. The table shows the number of golf balls of each color in the bucket.

Golf Balls in a Bucket

Color	Number
Pink	4
White	11
Orange	8
Green	18

Felix selects a golf ball at random. Based on the information in the table, which statement is true?

A The golf ball is more likely to be green than all other colors combined.

B The golf ball is equally likely to be pink, white, orange, or green.

C The golf ball is 2 times as likely to be orange as it is to be pink.

D The golf ball is 7 times as likely to be green as it is to be white.

17.

On Roberto's shelf are:

- 6 mystery books
- 5 science books
- 4 history books
- 3 adventure books

Roberto will randomly choose 1 book to read. What is the probability that he will choose an adventure book?

A $\frac{1}{3}$

B $\frac{1}{18}$

C $\frac{1}{5}$

D $\frac{1}{6}$

18.

The spinner shown has eight congruent sections.
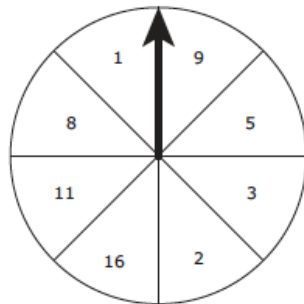
The spinner is spun 120 times. What is a reasonable prediction for the number of times the spinner will land on an even number?

A 75

B 45

C 15

D 40

19. A classroom is arranged with 8 seats in the front row, 10 seats in the middle row, and 12 seats in the back row. The teacher randomly assigns seats to students as they enter the classroom.

What is the probability that the first student who enters the classroom will be assigned a seat in the front row?

A $\frac{2}{5}$

B $\frac{2}{3}$

C $\frac{4}{11}$

D $\frac{4}{15}$

20. Jack tossed a coin three times. Which tree diagram shows all the possible outcomes of the coin landing heads up or tails up?
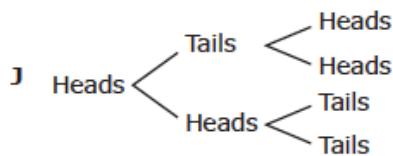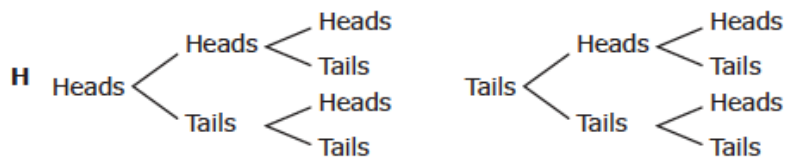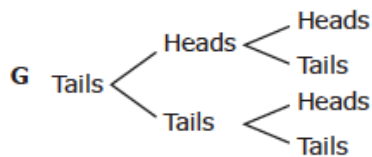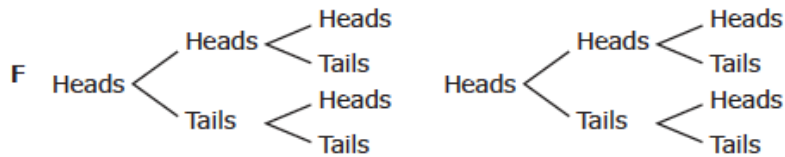
21. The manager of a movie theater randomly surveyed 50 people who entered the movie theater on Friday. The manager asked about the type of movie each person preferred. The results of the survey are shown in the table.

Survey Results

Type of Movie	Number of People
Horror	12
Comedy	15
Action	17
Drama	6

Based on the results in the table, which statement about a person who will go to this theater next Friday is true?

A   The person is three times as likely to prefer comedy as horror.

B   The person is twice as likely to prefer drama as horror.

C   The person is less likely to prefer horror or drama than action.

D   The person is more likely to prefer horror or comedy than action or drama.

22. The 200 students in a school band will attend an awards dinner. A random survey of 25 of these students was conducted to determine how many of each meal should be prepared for the dinner. The results of the survey are shown.

- 12 students want a beef meal.
- 8 students want a chicken meal.
- 5 students want a pasta meal.

Based on the survey results, which of these is the best prediction of the meals wanted by the 200 students?

A   There are 16 students who want a beef meal.

B   There are 52 students who want either a chicken meal or a pasta meal.

C   There are 32 more students who want a beef meal than want a chicken meal.

D   There are 24 more students who want a pasta meal than want a chicken meal.

23. A number cube with faces labeled from 1 to 6 was rolled 20 times. Each time the number cube was rolled, the number showing on the top face was recorded. The table shows the results.

Results

Number Showing on Top Face	Frequency
1	0
2	3
3	3
4	6
5	3
6	5

Based on these results, what is the experimental probability that the next time the number cube is rolled it will land with 5 or 6 showing on the top face?

A $\frac{2}{5}$

B $\frac{3}{20}$

C $\frac{1}{3}$

D $\frac{3}{5}$

24. Nerissa has 5 pink bows, 1 blue bow, and 4 purple bows in a box. She will randomly choose 1 bow from the box.

What is the probability Nerissa will choose a purple bow?

F $\frac{1}{2}$

G $\frac{2}{5}$

H $\frac{1}{10}$

J $\frac{3}{5}$

25. Vincent flipped three coins during a probability experiment. The outcomes of the first 40 trials are shown in the table.

Probability Experiment

Faces Showing on Flipped Coins	Number of Outcomes
3 tails	4
1 head, 2 tails	13
2 heads, 1 tail	16
3 heads	7

Based on the information in the table, in how many of the next 120 trials will the outcome be exactly two of the coins showing heads?

A 60

B 87

C 39

D 48

26. Justin has 50 pictures in an album. Of these pictures, 30 show his friends, 12 show his family, and 8 show only Justin. Justin is in $\frac{1}{2}$ of the pictures that show his friends and $\frac{1}{2}$ of the pictures that show his family.

Based on this information, which statement is true?

A The probability of randomly selecting a picture that shows Justin with his friends is greater than the probability of randomly selecting a picture that shows Justin with his family.

B The probability of randomly selecting a picture that shows Justin is 8%.

C The probability of randomly selecting a picture that shows Justin with his family is 5 times the probability of randomly selecting a picture that shows only his friends.

D The probability of randomly selecting a picture that does not show Justin is 21%.

27. A bag contains colored tiles.

- 3 tiles are red
- 6 tiles are green
- 3 tiles are blue

A tile will be randomly selected from the bag. What is the probability in decimal form that the tile selected will be green?

28. If a dot is dropped randomly onto the shape below, how likely is it land on the grey area? Fill in all the blanks WITH UNITS and show your work!

i. White area = _____

1 cm   2 cm

2 cm

7 cm
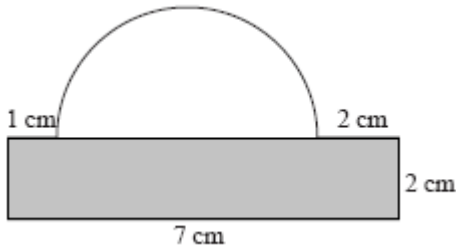
ii. Grey area = _____

iii. Total area = _____

iv. Probability as a fraction _____

v. Probability as a percentage _____

Thursday, April 23, 2020
Pre-Algebra: Chapter 11
Lesson: Quiz and Fun

Objective: Demonstrate proficiency in solving problems that involve basic counting principles (permutations and combinations), basic probabilities, odds in favor and against, and events that are mutually exclusive, overlapping, independent, or dependent.

NOTE: First, please complete the quiz located at the end of the packet. Then, you may begin this lesson.

Lesson:
This lesson consists of a quiz and then a fun math worksheet which provides a good review of both proportions and solving one variable equations, to include when the variable is on both sides of the equation. As review, remember, to solve a proportion, you cross-multiply and then isolate the variable. Looking at problem #1,

$$\frac{8}{x+8} = \frac{5}{x}$$

First, we cross multiply so $8(x) = 5(x + 8)$, which we can simplify to $8x = 5x + 40$.
We then subtract 5x from both sides and get $3x = 40$. We divide both sides by 3 and get $x = 13.33$ (we rounded to the nearest hundredth!). So now you go to the second sheet, find the square that has $x = 13.33$ and draw a triangle!

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Solving Proportions Create and Color

Directions: Solve each proportion below. Round your answers to the nearest hundredth if necessary. Then, find the box that contains your answer and follow the directions for that box. Color your creations when you are done!

Proportion	Solution	Directions
1. $\dfrac{8}{x+8} = \dfrac{5}{x}$	_____	Draw a triangle
2. $\dfrac{9}{7} = \dfrac{5}{x}$	_____	Fill the space with various sized vertical stripes
3. $\dfrac{4}{9} = \dfrac{x-7}{x}$	_____	Draw a refresh arrow (like on a web browser)
4. $\dfrac{2}{x-15} = \dfrac{1}{x}$	_____	Draw the universal sign for male
5. $\dfrac{1}{4} = \dfrac{x+15}{x-28}$	_____	Fill your box with rows of hearts
6. $\dfrac{4}{9} = \dfrac{x+14}{x-23}$	_____	Draw a lollipop
7. $\dfrac{10}{x+6} = \dfrac{1}{3}$	_____	Draw a pencil
8. $\dfrac{x+16}{7} = \dfrac{x}{1}$	_____	Draw an arrow pointing up
9. $\dfrac{9x-10}{15} = \dfrac{2}{7}$	_____	Draw a mustache
10. $\dfrac{2}{3} = \dfrac{x}{x-15}$	_____	Draw a flag
11. $\dfrac{24}{x-12} = \dfrac{6}{7}$	_____	Fill the box with lines that all originate from the left-hand bottom corner
12. $\dfrac{20}{x+7} = \dfrac{1}{2}$	_____	Draw a block letter A

$x = 12.60$	$x = 1.59$	$x = 3.89$
$x = 2.67$	$x = -15$	$x = -30$
$x = 24$	$x = 13.33$	$x = -43.60$
$x = 40$	$x = -29.33$	$x = 33$

ANSWER KEY

Answers to Exercises for Monday, April 20, 2020

A) Total area $= 12^2 = 144$
Grey $= 4$ triangles $= 4\left(\frac{1}{2}\right)(6)(6) = 72$

$$\frac{72 \div 12}{144 \div 12} = \frac{6}{12} = \frac{1}{2} \qquad \boxed{50\%}$$

B) Total $= \frac{1}{2}(12+6)(3) = \frac{1}{2}(18)(3) = 27$
White $= 3(6) = 18 \qquad$ Grey $= 27-18 = 9$

$$\frac{9}{27} = \frac{1}{3} \qquad \boxed{33.\overline{3}\%}$$

C) Total $= 32(21) = 32(20+1) = 640+32 = 672$
Grey $= 7(16) = 112$

$$\frac{112 \div 2}{672 \div 2} = \frac{56 \div 2}{336 \div 2} = \frac{28 \div 7}{168 \div 7} = \frac{4}{24} = \frac{1}{6} \qquad \boxed{16.\overline{6}\%}$$

D) Total $= 12(5) = 60$
White $= 8(3) = 24 \qquad$ Grey $= 60-24 = 36$

$$\frac{36 \div 6}{60 \div 6} = \frac{6}{10} = \frac{3}{5} \qquad \boxed{60\%}$$

E) Total $= \frac{1}{2}(6)(8) = 24$
White $= \frac{1}{2}(4)(3) = 6 \qquad$ Grey $= 24-6 = 18$

$$\frac{18 \div 6}{24 \div 6} = \frac{3}{4} \qquad \boxed{75\%}$$

F) $Total = 11(14) + 17(36) = 154 + 612 = 766$
   $White = 6(18) + 7(7) = 157$
   $Grey = 766 - 157 = 609$

   $\dfrac{609}{766}$ $\boxed{\sim 79.5\%}$

G) $Total = 7(10) = 70$
   $White = 7(6)(\frac{1}{2}) + 16(\frac{1}{2}) + 2(3)(\frac{1}{2}) = 32$
   $Grey = 70 - 32 = 38$

   $\dfrac{38}{70} = \dfrac{19}{35}$ $\boxed{\sim 54.3\%}$

H) $Total = \pi(2)^2 = 4\pi$
   $Grey = \frac{1}{4}(4\pi) - \frac{1}{2}(2)(2) = \pi - 2 = 1.14$

   $\dfrac{\pi - 2}{4\pi} = \dfrac{\pi}{4\pi} - \dfrac{2}{4\pi} = \dfrac{1}{4} - \dfrac{1}{2\pi}$

   $= \dfrac{1}{4} - \dfrac{1}{2} \cdot \dfrac{7}{22}$

   $= \dfrac{1}{4} - \dfrac{7}{44}$

   $\boxed{\sim 9.09 \%}$ $= \dfrac{11 - 7}{44} = \dfrac{4}{44} = \dfrac{1}{11}$

I) $Total = 12(12) = 144$
   $White = \pi(6)^2 = 36\pi$ $Grey = 144 - 36\pi$
   $\dfrac{144 - 36\pi}{144} = 1 - \dfrac{36\pi}{144} = 1 - \dfrac{1}{4}\pi$ $\boxed{\sim 21.46\%}$

J) $Total = 8(8) = 64$ $\dfrac{16\pi}{64} = \dfrac{\pi}{4}$ $\boxed{\sim 78.5\%}$
   $Grey = 4 \cdot \pi(4) = 16\pi$

Answers to Exercises for Tuesday, April 21, 2020 and Wednesday, April 22, 2020

1.	**D**	2.	**G**	3.	**A**	4.	**D**
5.	**A**	6.	**H**	7.	**H**	8.	**H**
9.	**C**	10.	**490**	11.	**A**	12.	**H**
13.	**J**	14.	**J**	15.	**J**	16.	**C**
17.	**D**	18.	**B**	19.	**D**	20.	**H**
21.	**D**	22.	**C**	23.	**A**	24.	**G**
25.	**D**	26.	**A**	27.	**.5**		

28.	White area: 6.28cm^2 Grey Area: 14cm^2
	Total Area: 20.28cm^2 Probability as a fraction: $\frac{14}{20.28}$
	Probability as a percentage: 69%

Answers to Exercises for Thursday, April 23, 2020

Solving Proportions Create and Color

Directions: Solve each proportion below. Round your answers to the nearest hundredth if necessary. Then, find the box that contains your answer and follow the directions for that box. Color your creations when you are done!

Proportion	Solution	Directions
1. $\dfrac{8}{x+8} = \dfrac{5}{x}$	$x = 13.33$	Draw a triangle
2. $\dfrac{9}{7} = \dfrac{5}{x}$	$x = 3.89$	Fill the space with various sized vertical stripes
3. $\dfrac{4}{9} = \dfrac{x-7}{x}$	$x = 12.60$	Draw a refresh arrow (like on a web browser)
4. $\dfrac{2}{x-15} = \dfrac{1}{x}$	$x = -15$	Draw the universal sign for male
5. $\dfrac{1}{4} = \dfrac{x+15}{x-28}$	$x = -29.33$	Fill your box with rows of hearts
6. $\dfrac{4}{9} = \dfrac{x+14}{x-23}$	$x = -43.60$	Draw a lollipop
7. $\dfrac{10}{x+6} = \dfrac{1}{3}$	$x = 24$	Draw a pencil
8. $\dfrac{x+16}{7} = \dfrac{x}{1}$	$x = 2.67$	Draw an arrow pointing up
9. $\dfrac{9x-10}{15} = \dfrac{2}{7}$	$x = 1.59$	Draw a mustache
10. $\dfrac{2}{3} = \dfrac{x}{x-15}$	$x = -30$	Draw a flag
11. $\dfrac{24}{x-12} = \dfrac{6}{7}$	$x = 40$	Fill the box with lines that all originate from the left-hand bottom corner
12. $\dfrac{20}{x+7} = \dfrac{1}{2}$	$x = 33$	Draw a block letter A

https://funrithmetic.com/

$x = 12.60$

$x = 1.59$

$x = 3.89$

$x = 2.67$

$x = -16$

$x = -30$

$x = 24$

$x = 13.33$

$x = -43.60$

$x = 40$

$x = -29.33$

PROBABILITY QUIZ

1. $_{10}P_5$ =	2. $_8C_3$ =

The picture below shows the possible cards that could be chosen from a standard pack of playing cards. You may use this picture to answer **Questions #6-9**

3. One card is drawn at random. What is the probability of choosing a multiple of 2? BOX final answer.

4. One card is drawn at random. What is probability of choosing a diamond or an 8?
    a. These events are (circle ONE):   mutually exclusive   overlapping   independent   dependent
    b. Show work and BOX final answer.

5. One card is drawn at random and **then replaced.** Then a second card is drawn. What is the probability of choosing a red 7 on the first drawn **and** any 3 on the second draw?
    a. These events are (circle ONE):   mutually exclusive   overlapping   independent   dependent
    b. Show work and BOX final answer.

6. One card is drawn at random and **then put aside.** Then a second card is drawn. What is the probability of choosing any black card on the first draw and choosing another black card on the second draw?
    a. These events are (circle ONE):   mutually exclusive   overlapping   independent   dependent
    b. Show work and BOX final answer.

7. **Which of the two events are mutually exclusive?**
   A. Drawing a card from a deck and getting a king or a club
   B. Rolling a die and getting an even number or a 6
   C. Tossing two coins and getting two heads or two tails
   D. Rolling two dice and getting doubles or getting a sum of 8

8. **Which of the two events are not mutually exclusive?**
   A. Rolling a die and getting a 6 or a 3
   B. Drawing a card from a deck and getting a club or an ace
   C. Tossing a coin and getting a head or a tail
   D. Tossing a coin and rolling a die and getting a head and an odd number

9. **Which of the following events are dependent?**
   A. Tossing a coin and selecting a card from a deck
   B. Tossing a coin then tossing a second coin
   C. Running a race and getting tired
   D. Drawing a card from a deck and replacing it, then drawing a second card

10. **At a high school with 200 students, 32 play soccer, 18 play basketball, and 8 play both sports. If a student is selected at random, find the probability that a student plays soccer or basketball.**
    A. $\frac{21}{100}$
    B. $\frac{1}{4}$
    C. $\frac{4}{25}$
    D. $\frac{1}{5}$

11. **A storeowner plans to have his annual "Going Out of Business Sale." If each month has an equal chance of being selected, find the probability that the sale will be in a month that begins with the letter J or A.**
    A. $\frac{1}{4}$
    B. $\frac{1}{6}$
    C. $\frac{1}{3}$
    D. $\frac{5}{12}$

12. **A box contains four $1 bills and six $5 bills. If three bills are selected at random without replacement, find the probability that all three are $5 bills.**
    A. $\frac{27}{125}$
    B. $\frac{1}{4}$
    C. $\frac{1}{6}$
    D. $\frac{3}{5}$