2019 Southern Nevada Girls Math Tournament

Grade 5 Contest
General Round

Name: _____

RULES

1. The General Round consists of 25 problems.
2. The General Round must be completed individually.
3. You will have 40 minutes to complete the General Round.
4. You will receive 1 point for each correct answer.
5. There is no penalty for incorrect answers.
6. You may NOT use a calculator on this round.
7. Answers are to be written on the provided lines. Units are not required.

Score: ____/25 pts

1. _____ Crystal has 17 shark-shaped lollipops that she wants to give her friends. If she gives 4 to one friend, 3 to another, and 6 to her third friend, how many lollipops does she have left?

2. _____ What is the largest number you could reach if you started counting by 2s and stopped before you went over 59?

3. _____ Two angles in a triangle are 90 degrees and 63 degrees. Find the measure of the other angle.

4. _____ What is the probability of rolling even numbers on a regular die on 2 consecutive rolls?

5. _____ There are seven businessmen at a party. If each businessman shakes hand with each other, how many handshakes take place?

6. _____ Ashley thinks she can outrun the Flash. If Ashley runs 28 miles in 4 hours and the Flash can run 800 miles in 30 minutes, how much faster is the Flash than Ashley in miles per hour?

7. _____ It takes Mr. Hikmet 4 days to eat 512 muffins. How many days would it take Mr. Hikmet to eat 896 muffins?

8. _____ The area of a circle is 144π square feet, find its circumference.

9. _____ Richie Rich has a collection of scrunchies of 8 red, 11 blue, 3 holographic, 5 yellow, and 1 green. What is the probability that he picks out 3 red scrunchies without replacement?

10. _____ What is the last digit of 2 to the 54th power?

11. _____ If a 😄 b = 1/a + 1/b. What is (2 😄 1) 😄 (4 😄 3) as a common fraction?

12. _____ What is the square root of 25 plus the square root of 36?

13. _____ Julio has a ham addiction, and must stop buying ham. He converts to vegan pork instead. A pack of vegan pork is $3.50, and he buys one pack every week. A pack of ham was $25 for a membership fee, then $1.50 for each pack, which he purchased every week. How much money (in dollars) has Julio saved by buying vegan pork instead of ham over seven weeks?

14. _____ Gram Gram produces cookies at a rate of 18 cookies per second. However, every 3rd batch, her oven burns at least 6 cookies and at most 18 cookies. What is the difference between the minimum and maximum amount of time to bake at least 180 cookies? (A batch cannot take a fraction of a second.)

15. _____ Sid slowly slips across steps as she senselessly sips on soda. For each sip, Sid slips six steps south. Sid sips six sips per second, so she stops every sixty slips for six sips so she slips slower. If she should slip six hundred and six steps, for how many seconds did she sip?

16. _____ L'monj'llo and Orangej'llö have the same birthday, but n years apart from each other. 20 years ago, L'monj'llo was twice as old as Orangej'llö. In four years, L'monj'llo will be 4

times as old as Orangej'llö's age from 20 years ago. What is the difference in L'monj'llo's and Orangej'llö's ages?

17. _____ Dr. Elijah Webb is the creator of the World Wide Webb. Unlike the normal WWW, Dr. Webb likes to simplify things. The World Wide Webb only offers 16 websites. Each website is given a number, that can be graphed on a Cartesian plane. The first website is given (0,0) and the last website is given (3,3). This creates a 3x3 square when graphed. How many ways can a user go from website one, to website 16, but they may only travel up and to the right?

18. _____ Princess Pop Off is watching a pirated bootleg emoji movie with a playing time of 2 hours and 14 minutes not including ads. The website shows a 30 second ad as soon as Princess Pop Off starts the movie as well as every 10 minutes after until the movie ends. What percent of Princess Pop Off's total viewing time does she spend watching ads? Round to the nearest percent.

19. _____ If double an angle's complement equals a fifth of its supplement, what is the measure of the angle?

20. _____ Franklin Pierce is about to bruh. In doing so, he will create n new perceivable colors. However, he doesn't know exactly how much n is. All he knows is that n is the sum of three consecutive odd integers. Franklin also knows that each of these three integers is prime. According to Franklin, what is the minimum amount of colors he will create once he bruh's?

21. _____ To make a mixture of CoolGuy Sauce, you need to mix ChugJug Liquid and Mountain Dew Baja Blast in the exact ratio 5:7. How many mL of Mountain Dew Baja Blast need to be mixed with an unending amount of ChugJug Liquid to make 240 mL of CoolGuy Sauce? (Note: No liquid is lost or gained in the mixing)

22. _____ Dr. B. G. Cryptic is the world's most renowned expert in cryptography and he has invented another amazing code; every letter is replaced by the first positive whole number containing said letter. For example, he would replace "A" with the number "1,000", as when spelled out, "1,000" is the first number to contain an "A". Unfortunately, the genius failed to notice a critical flaw in his plan: a number can represent several different letters. How many possible messages can be made with the arrangement "1, 2, 3, 4, 5"?

23. _____ An alien race called the Poggers lives on planet Twitch. They have three types of currency: the Pog, the Kappa, and the MonkaS. 7 Pogs are worth 224 Kappas and 1 Kappa is worth 46 MonkaS's. An alien named Japàul wants to buy an object worth 10 Pogs, but the only form of currency he owns is MonkaS's. How many MonkaS's must Japàul use to buy the object?

24. _____ Ray William Johnson the III has been doing the Mon. The Mon consists of choosing 6 numbers out of 8 possible numbers, how many ways could he do the Mon?

25. _____ Brad Bradson owns four raccoons. The first raccoon has 2 stripes. Raccoon number n has the number of stripes defined as $3(n-1)+1$ where n is the number of stripes of the previous raccoon. What is the average number of stripes on all four of the raccoons?

2019 Southern Nevada Girls Math Tournament

Grade 5 Contest
Target Round

Name: _____

RULES

1. The Target Round consists of 8 problems.
2. The Target Round must be completed individually.
3. You will have 6 minutes to complete each pair of questions.
4. The Target Round consists of 4 pairs, or 8 questions.
5. You will receive 2 points for each correct answer.
6. There is no penalty for incorrect answers.
7. You may use a calculator on this round.
8. Answers are to be written on the provided lines. Units are not required.

Score: ____/16 pts

1. _____ Lagrange loves making errors in his equation. An error is where an equation cannot be solved. Lagrange wants to make these two equations into an error: $10x - 5 = 3$, and $ax - 7 = 3$. What must Lagrange replace a with to make the equations an error?

2. _____ Tai Lopez is in his garage, with his Ferrari, gaining KNOWLEDGE. In order to gain KNOWLEDGE, he must rearrange the word in as many ways a possible. How many ways could he do this?

3. _____ My soundcloud is getting a lot of soundclout. For each person that listens to one of my fire mixtapes, my "clout" goes up by a random number from 1-10, inclusive. After 30 people listen to my mixtape, what is the difference between the maximum and minimum amount of "clout" I gained?

4. _____ A weird number is a number that is the product of two consecutive primes. For example, $11 \cdot 13 = 143$, and 143 is a weird number. What is the least common multiple of the 3 lowest weird numbers?

5. _____ What is the volume of a cube whose volume is numerically equal to its surface area?

6. _____ Jake Paul currently has 18,000,000 subscribers. Pewdiepie currently has 90,000,000 subscribers. If Jake Paul's new single, "I'm Single", is boosting his subscriber count 5 subscribers every second. Pewdiepie only gains 1 subscriber per second. How many hours will it take Jake Paul to pass Pewdiepie?

7. _____ Twenty muffins at the same time in Mr. Hikmit's mouth will make Mr. Hikmit stop eating. Mr Hikmit puts four muffins in his mouth every second, and digests two muffins every second. How many seconds can it take for Mr. Hikmit to stop eating?

8. _____ It takes Isaiah 10 minutes to mow a lawn. It takes Pew Lagoo 5 minutes to mow a lawn. If Isaiah mows half of the lawn and as soon as Isia stops, Pew Lagoo starts and finishes the lawn, how many minutes passed since Isaac started?

2019 Southern Nevada Girls Math Tournament

Grade 5 Contest
Team Round

Team Name: _____

RULES

1. The Team Round consists of 10 problems.
2. The Team Round must be completed in teams of up to 4.
3. Your team will have 20 minutes to complete the Team Round.
4. Your team will receive 1 point for each correct answer.
5. There is no penalty for incorrect answers.
6. You may use a calculator on this round.
7. Answers are to be written on the provided lines. Units are not required.

Score: ___/10 pts

1. _____ If one leg of a right triangle with area 54 is 9, what is the length of the hypotenuse?

2. _____ Gekyume has a fast watch that gains five minutes every minute. This means that Geykume set his watch to the correct time at noon, but at 12:01 his watch shows 12:06. If Gekyume sets his watch to the correct time at 12:00 p.m. what time does his watch show at 1:00 p.m.?

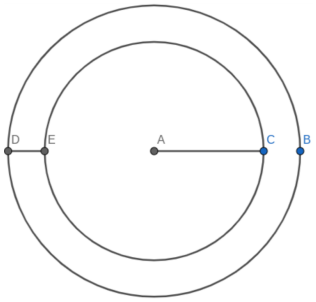
3. _____ Steve Jobs, Elon Musk, Bill Gates, and Mark Zuckerberg are at a track meet. Elon Musk is ahead of Steve Jobs. Bill Gates and Mark Zuckerberg both cheated, therefore could not lose the race, but not get first. If $a = 1$, $b = 2$, $c = 3$ $d = 4 \ldots$ $y = 25$, and $z = 26$, what is the value of the first letter of the first name of second place plus the first letter of the first name of third place?

4. _____ A square is inscribed in a circle which is inscribed in another square which is inscribed in another circle. If the radius of the bigger circle is 8, what is the area of the smallest square?

5. _____ Alex and David are brothers and they go to the same school. Today, they left their home at the same time and walked to school. Alex walked to the school at a speed of 360 feet per minute. David walked to the school at a speed of 320 feet per minute. Alex, after 180 feet, remember he forgot his phone and walked back home and came back running to school at 400 feet per minute. David arrived 3 minutes before Alex. How far is the distance before the school and their home?

6. _____ Two letters are randomly chosen without replacement from the word FIDGET SPINNER. What is the probability that both are consonants? (Note: All letters in this case are distinct, so you can, for example, pick an N and still have the other N available)

7. _____ There is a circular pool with a radius of 6 feet. (AB)There is also a wooden border around the pool with a 2 feet width. (CD) How many feet is the area of the border if D,E,A,C, and B are on the same line? Express your answer in terms of .



8. _____ Mayor Gardner needs your help. She needs to find the last digit of 3^{2019}.

9. _____ It can be proven that the government is hiding its secret mind-control facility somewhere in the Mojave Desert. If the facility is in the shape of a right hexagonal prism with bases composed of regular hexagons of side length 100 meters and its top is 30 meters below ground, and its bottom is 150 meters below ground, what is the volume of the facility? (Write your answer to the nearest whole cubic meter)

10. _____ When the sum of two digits is subtracted from the two digit number they make up, the answer is divisible by seven. What is the average value of the units digit for the number satisfying this property?