

Winter Math Contest: Panda Level

Math Power

December 15, 2024

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By Dr. Li

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Name:
(First) _____ (Last) _____

Score: _____

School: _____ Grade: _____

Parent's Name: _____ Date: ____/____/____

Parent's Signature: _____ Parent's Email: _____@_____

1. This contest is conducted under my supervision.
2. There is no time limit for this contest.
3. No calculator/device should be used.
4. This test is not for distribution.
5. No email should be used for submission.

I choose to

By 1/6 Mail-in this test in stapled hardcopy: P. O. Box 10893, Rockville, MD 20849

By 1/8 Drop-In this test in stapled hardcopy: 10101 Molecular Dr, Ste 100, MD 20849 (3:00 – 6:30 pm)

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1. Jill bought 2 packages of crayons for 60 cents each. She also bought 3 packages of crayons for 45 cents. How much did Jill spend?
2. Joe collects coins. He has 84 coins in his collection. There are 14 dimes and 30 quarters. The rest are pennies. How many pennies?
3. Three friends shared a dozen donuts. Tim ate $\frac{1}{3}$ of the donuts. Kate ate $\frac{1}{2}$ of them. How many donuts are left?
4. Pam's car holds 10 gallons of gasoline. After filling the tank, she drove to the beach. She had used $8\frac{1}{4}$ gallons. How many gallons are left in her gas tank?
5. Ed and Jason are hiking 1.2 mile to a waterfall. They walk .5 miles to a bridge. Then they walk .3 miles to a river. How much farther do they have to walk to the waterfall?
6. Ruth, Roz, and Gladys bought two boxes of golf balls. Each box contains five sleeves of dozen balls in each. How many golf balls will each person get?
7. There are 12 children in the art club. The teacher put them into groups, so that each group has the same number (greater than one) of children.
 - a) What is the great number of groups?
 - b) What is the smallest number of groups?
8. When Alex got on the school bus, there were 3 other children on the bus. At the next stop, 3 more children got on the bus. How many children were now on the bus?
9. Edna loves cookies. She had 4 cookies. She ate 2 of the cookies, and her mom gave her another one. How many cookies does she have now?

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10. Phoebe was putting her collection of postage stamps into a scrapbook. She put one stamp on the first row. She put 3 stamps on the second row. She put 5 stamps on the third row. So, she continues to put more stamps in the same pattern with a total of 5 rows. How many stamps in total are there?
11. A basket contains more than 12 but fewer than 32 eggs. When you count the eggs by fours, you have three left over. When you count by fives, you have two left over. How many eggs are in this basket?
12. John and Jean have a foot race starting with their right feet at the starting line, stepping forward on the left foot. If John takes two steps to every three Jean takes, how many steps (each) ahead will John and Jean both hit on the right foot again?
13. Apple juice was served at the picnic. Each of 3 girls poured 9 glasses of juice. How many glasses of juice were there?
14. Patty bought 6 packages of paper plates. There were 8 plates in each package. How many plates did she buy?
15. Tabby Tiger roars every time someone passes her home in the zoo. One day the zookeeper kept track of how many times Tabby roared in one hour. Here are the clues he gave: Tabby roared more than 39 times; she roared fewer than 46 times; you say the number when you count by threes and by fives. How many times did Tabby roar in one hour?
16. Tom is 4 feet tall. His brother, Hal, is 4 inches taller. How many inches tall is Hal? (Hint: 1 ft = 12 in)
17. A square court measures 15 feet on each side. How many yards is that? (Hint: 1 yd = 3 ft)

Ann's new pencil was 18 centimeters long. After 2 weeks, her pencil was only half as

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long. How many centimeters was Ann's pencil then?

18. John lives in Milton, and he decides to visit his friend in Colville. It's 21 miles from John's house to his friend's house. First he walks 1 mile to the bus station. Then he rides the bus 17 miles to Colville. He walks the rest of the way to his friend's house. How many miles does John walk altogether to get to his friend's house? Weight

19. Three boxes of snake powder weigh the same as one box of snake powder and one can of lizard tear. How much does one can of lizard tears weigh?



20. A giant weighed some of the giant vegetables that grew in his garden. He weighed a tomato, an ear of corn, a turnip, and a carrot. The carrot was 8 pounds less than the turnip, and the turnip was 3 pounds more than the ear of corn. An ear of corn weighed half as much as the tomato. The giant rolled the tomato onto the scale. It was 18 pounds. How much did the carrot weigh?

21. Martha's math book weighs 14 ounces. Her social studies book weighs 6 more ounces. How many pounds and ounces do Martha's books weigh together?

22. The rhinos at the zoo weigh about 800 pounds each. About how many rhinos can be carried in a truck that holds 2 tons? (Hint: 2000 lbs. = 1 ton) Volume

23. Hank is selling lemonade. He makes 2 quarts. How many cups of lemonade does Hank have to sell? (Hint: 1 quart = 4 cups)

24. Jenny is making cookies. Her recipe is below.

Sugar Cookies
1 cup flour
 $\frac{1}{2}$ cup sugar
 $\frac{1}{3}$ cup butter
Mix the flour, sugar, and butter.
Roll into balls.
Bake 10 minutes
Makes 8 cookies.

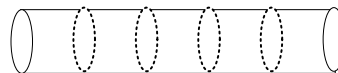
How can Jenny change her recipe to make 24 cookies?

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25. Kris built a fence for her dog's play area. The fence is 10 feet long and 3 feet wide. How many feet of fencing did Kris use?
30. Ezra wants to watch a television program that will begin at 9:00 P.M. His mom says he can watch it but he must first do his chores and finish his homework. It takes him 30 min to do his chores and another 90 min to finish his homework. At what time must Ezra begin if he is to finish in time to watch the program?

26. Ron's room is 9 feet long and 8 feet wide. How many square feet of carpet does he need to cover the floor?

31. It takes 20 minutes to cut a log crosswise into 5 pieces, each 4 ft long. How many minutes will be needed to cut if you need 12 pieces, each 4 ft long?



27. Abby mailed 6 postcards at 25 cents each and 3 letters at 30 cents each. How much did she pay in postage?

28. In how many ways can you have 45 cents with 5 coins?

32. The solar eclipse began at 1:51 in the afternoon and ended at 3:15 p.m. How many minutes did the eclipse last?

29. Kristi has \$1 in her pocket made up of seven coins. How many different ways are possible?

33. Maggie went to a movie. She paid \$2.00 for her ticket, \$1.25 for popcorn, and \$.75 for a drink. How much did Maggie spend at the movie?

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34. Scott saved \$7.40 buy some “growing ropes” at the magic shop. Each rope costs 75 cents. How many ropes can he buy at most?

35. Sam saved nickels and dimes until he had 55 cents to buy the game of Beast and Beetles. Sam paid for the game with 8 coins. How many of each kind of coin did Sam have?

36. “This costs 27 cents,” said the cashier as she handed the dinosaur stamp to Michael. Michael reached into the pocket of his jeans and pulled out coins (dimes, nickels, and pennies). What is the smallest number of coins he can use to pay the exact amount?

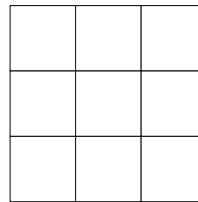
37. Trucks cost \$1.25. Kites cost 10 cents and marbles cost 7 cent. Elizabeth bought 2 trucks, 5 kites, and 8 marbles. Glen bought 1 truck, 10 kites, and 12 marbles. Hester bought 3 trucks, 15 kites, and 20 marbles. How much did they spend in total?

38. Simon, Tim, and Mary are comparing the money they have in their pockets. Simon has 4 quarters and 5 dimes, while Tim has 6 quarters and 4 nickels. Mary starts with 1 quarter, 10 dimes, and 3 pennies. Mary wants to help Tim have twice as much money as Simon. After Mary gives Tim the required amount, how much money does Mary have left? Present the solution with the chart below.

	Q	D	N	P	Total
M					
T					
S					

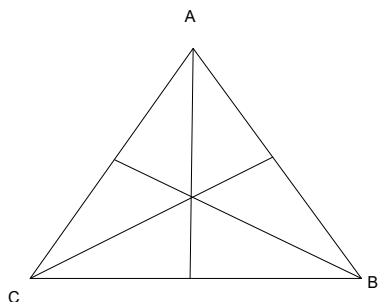
39. Ivan has 50 cents. Krista has one half of that. Luigi has 10 cents more than Krista. Nicholas has twice as much as Luigi. Quentin has 30 cents less than Nicholas.

40. How many squares can you find in the following figure? (Hint: The squares are 3 different sizes.)



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41. How many triangles can you find?



45. Scott has 24 meters of fence and wants to make the biggest rectangular yard possible for his dog to run in. What length should he make each side of the yard?

42. I am a 3-dimensional figure. My base is a triangle. My top is a point. I have only 4 faces. What am I?

46. Little Pig got 24 bricks and built a wall along one side of his garden. The wall was 4 bricks high and 6 bricks across. Little Pig painted the wall. He painted the exposed faces of the bricks. How many faces of bricks did Little Pig have to paint?

43. I am a 4-sided polygon. Two of my sides are equal lengths. Two of the other sides are parallel. What am I?

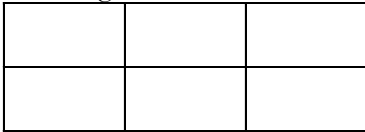
47. Hal and his friends went digging for dinosaur teeth. They dug all along their path. They started at their tent and walked north 5 feet toward the mountain. They turned east toward the river and walked ahead 5 feet. They turned south toward the fence and walked 3 feet. Then they turned west toward the trees and walked 4 feet. Finally they turned south toward the fence and walked 2 feet. There they dug up a dinosaur tooth! How far was the dinosaur tooth from their tent?

44. Walter has a set of building blocks. Each block is a rectangular prism. If Walter builds a tower with 3 blocks stacked up, how many edges will the building have? How many faces?

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48. Will enters the elevator of a very tall building, carrying five pizzas.
- He takes the elevator to the 8th floor, where he delivers one pizza.
 - He then returns to the elevator, goes down 4 floors, and delivers another pizza.
 - After that, he rides the elevator up 11 floors and delivers the third pizza.
 - Finally, Will takes the elevator up 5 more floors to the building's top floor and delivers the remaining two pizzas.
- How many floors does this building have?

49. In the Taylor family's playroom, there's a parking lot made for model cars, arranged in a 2×3 grid as below:



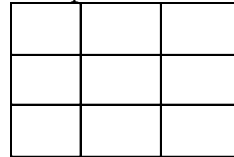
Six model cars are parked in the lot, one in each space. The cars are placed according to the following rules:

- The red car is parked in front of the green car.
- The black car is parked between the green car and the yellow car.
- The blue car is parked to the right of the red car.
- The orange car is parked in front of the yellow car.

Using these clues, determine the color of each car in the parking lot.

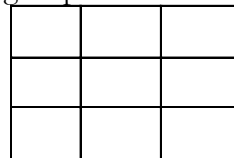
50. Gary built a long tunnel in his backyard using 15 cardboard boxes. To make the tunnel, he cut 2 sides off each box and connected the boxes in a single row. One night, it rained. Every side of the boxes that was exposed to the rain—meaning not touching the ground—got wet. How many sides of the boxes got wet?

51. Sam put newspapers in 6 of the 9 mailboxes (arranged in a 3 by 3 grid) at the Pine Apartments.



He put one paper in each of 6 boxes. When he finished, there were 2 newspapers in each row and in each column of boxes.

52. Georgina had 3 pennies, 3 nickels, and 3 dimes. She put them in 3 rows and 3 columns. When she finished, there was one penny, one nickel, and one dime in each row and in each column. Where did Georgina put each of her coins?



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53. Make pictures of 60 shapes. $\frac{1}{3}$ of the shapes are circles. $\frac{1}{5}$ of the shapes are rectangles. $\frac{1}{4}$ are triangles. The rest are squares. How many shapes are rectangles? How many shapes are squares?
54. Draw a shape that has five angles. What is it called? Divide it into the largest triangles. How many of them?
55. What 2-digit number is three times the sum of its digits?
56. a 2-digit number, which is four times the sum of its digits. Write as many as possible.
57. Dylan's mother offered to pay him to carry 10 bags of leaves to the compost pile. Dylan said he would do it if she would pay him 1 cent for the first bag, 2 cents for the second, and so on, doubling the amount with each bag. How much would she have to pay?
58. Some scientists believe they saw 52 meteors and others believe they saw 27. How many more did one group supposedly see than the other?
59. A crew of spiders moved into the scary old house and started working at once. They spun 2 webs on the first night, and 7 webs on the second night. On the third night they wove 12 webs. Every night they made 5 more webs than they had made the night before. If the spiders kept spinning in this way, on what night did they spin their 10th web?
60. Al already has 16 more chips than Brian has. Al and Brian are playing a game with their friends. Brian and Al have won 44 chips altogether. How many chips has each boy won?
61. Lyn and her friends made a pile of 31 snowballs this morning. Then the sun came out. It melted 1 snowball in the first hour, 2 snowballs in the second hour; and 4 snowballs in the third hour. Each hour the sun is melting twice as many snowballs as it did the hour before. If the sun keeps melting snowballs in this way, how many hours in all will it take the sun to melt the whole pile of snowballs?

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62. Bowser, poor dog, has lost his collar; so he has a few uninvited fleas and ticks in his house. Each flea has 6 legs, and each tick has 8 legs. Not counting Bowser's legs, there are 48 legs in Bowser's house. There are the same number of flea legs as tick legs. How many fleas and how many ticks are there in Bowser's house?
63. Papa's Pizza Place just opened for business. The good smells bring people into Papa's for pizza. Papa's sold 9 pizzas on the first day, 15 pizzas on the second day, and 21 pizzas on the third day. On the fourth day, Papa's sold 27 pizzas. Papa's business kept growing in the same way for a long time. How many pizzas did Papa's Pizza Place sell on the 11th day?
64. Something terrible is happening in the third grade at Summers-coming School. A few students got the wigglegigs on Monday, and it seems to be spreading. On Tuesday, 2 more students caught the wigglegigs than on Monday. Each day after that, 2 more students caught the wigglegigs than the day before. On Friday, 12 students caught the wigglegigs. How many students caught the wigglegigs in five days?
65. Marlon was saving his money to buy a drum. He was earning money by pulling weeds in his neighbor's garden. He earned \$0.50 the first week, and \$1.00 the next week. The next week he earned \$1.50, and he put it with the rest of his money. Each week he earned \$0.50 more than he had earned the week before. If Marlon kept earning money this way, in what week would he have a total of \$10.50?
66. Sarah and Kay are both collecting baseball cards. On Monday each of them got 3 cards. The next day Sarah got 5 and Kay got 4. On Wednesday Sarah got 7 and Kay got 6. On Thursday each girl got 9. If Sarah and Kay keep getting cards in the same way, how many cards will Kay get on the day that Sarah gets 15?
67. When the leaves turned color, Hal and Dan began to sell pumpkins. On the first day, Hal and Dan each sold one pumpkin. The next day Hal sold 2 pumpkins and Dan sold 4. On the third day Hal sold 4 pumpkins and Dan sold 7. On the fourth day Hal sold 7 and Dan sold 10. If Hal and Dan kept selling pumpkins in the same way, how many pumpkins did Hal sell on the day Dan sold 19?

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68. When Daryl was 11 years old and his sister, Coralee, was 3, they watched a television show about hot-air balloons. Daryl started saving his money. When Daryl was twice as old as Coralee, he took her on a ride in a hot-air balloon. How old were Daryl and Coralee when they rode in the balloon?
69. Dean works with baby animals at a zoo. This week he measured a giraffe, an ape, and a tiger. The tiger had grown 4 inches less than the giraffe. The giraffe had grown twice as much as the ape. The baby ape had grown 6 inches since it was measured the last time. How many inches had the tiger grown?
70. Annie and Rob were playing a board game. During the game, they both collected white chips and red chips. Each white chip was worth 4 points and each red chip was worth 3 points. At the end of the game, Annie had 14 chips worth 50 points in all. How many chips of each color did she have?
71. When Sue planted them, the oak tree was three times as high as the maple tree. Both trees grew about one foot a year. Now the oak tree is 13 feet high and the maple tree is 9 feet high. How high were the trees when Sue planted them?
72. Two koalas were born this month at the zoo. Kippy is 27 days old and Katy is 3 days old. Soon Kippy will be four times as old as Katy. How old will Kippy be then?
73. Ivan stopped, but George kept running for 11 more laps. By the end of the run-athon, Ivan and George had run 45 laps around the school playground altogether. How many laps had each boy run?
74. Make a row of 30 flowers. The first flower and every alternate flower thereafter are red, while the remaining flowers are yellow. What color is the 12th flower? What color is the 27th flower? What color are the odd numbers? What color are the even numbers?

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75. The brown hen laid 12 eggs. Seven of them have hatched. The red hen laid 13 eggs. Four of them have hatched. How many chicks in all? How many eggs are left?

76. Joan has read six books. Karen has read one more book than Joan has read. Henry has read two fewer books than Joan has read. Don has read twice as many books as Henry has read. Tinna has read five fewer books than Don has read. Who has read the most books? Who has read the fewest books?

77. Mice weigh one pound. Cats weigh ten pounds. Cats and mice are playing on the seesaw. On the right side are fifteen mice and two cats. On the left side are three cats and three mice. Draw the seesaw as it would look that way. Find an easy way to make the seesaw balance.

78. Carla has six red blocks and four blue blocks. Don has two fewer red blocks and one more blue block than Carla has. Pat has one more red block and three fewer blue blocks than Don has. How many red blocks in all? How many blue blocks in all? Who has the most red blocks? Who has the fewest blue blocks?

	Red	Blue
Carla		
Don		
Pat		
Tot		

Mice weigh one pound. Cats weigh ten pounds. Dogs weigh one hundred pounds. The animals are playing on the see saw. On one side are four dogs, two cats, and one mouse. On the other side are two dogs, eight cats, and seven mice. Draw the seesaw with the animals on each side. What can the animals do to make the seesaw balance?

79. There are 24 students divided evenly into 6 groups, each seated at a table for painting. At each table, there is one yellow paint jar, twice as many red paint jars as yellow, and twice as many blue paint jars as red.

- How many students are in each group?
- How many blue jars are on each table?
- How many red jars in all?
- How many paint jars in all?

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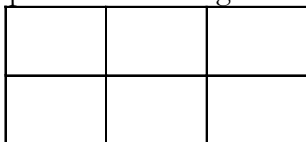
80. We have 40 pencils to be divided equally among Bob, Darin, Carl, George, and Meg. How many pencils will each get?
81. The people of Domino City use dominoes to show their house numbers. Each domino has two sets of dots on it, like 4 dots with 2 dots, or 2 dots with 4 dots, or 2 dots with 2 dots. Different sets of dots are used on each street. The people who live on Peach Street use dots made with sets of 2 dots, 4 dots, 5 dots or 6 dots to make their house numbers. What are all the different house numbers that the people on Peach Street can make?
82. Jerry's Sub Shop makes the best submarine sandwiches in town. Look at the lists of good things Jerry puts on his sandwiches:
- meats -- steak, ham or baloney;
cheeses -- Swiss or American; and
spreads -- mustard or mayonnaise.
- You ask Jerry to make a sandwich with one kind of meat, one kind of cheese, and one kind of spread on it. What are all the different sandwiches Jerry could make for you?
83. Dan wins points by tossing rings at a number board. There are four numbers on the board: 1, 4, 5, and 7. Dan gets to toss two rings on each round, and he never misses! He hits a number every time he tosses a ring. What are all the different ways Dan could score points in each round? For example: round 1 (first ring 1, second ring 1); round 1 (first ring 1, second ring 4)...
84. The workers in the Bumblebee Balloon Factory make many different kinds of balloons. Each balloon is round or shaped like a heart, and is red, orange, or yellow. Before the balloon leaves the factory, a worker paints a picture of a happy face or a bumblebee on it. What are all the different kinds of balloons that are made in the Bumblebee Balloon Factory?
85. Aunt Andrea is shopping for a T-shirt for Diana. She is having a hard time making up her mind what T-shirt to buy. She can get long-sleeve or short-sleeve T-shirts, in pink, blue, red, or green. Each T-shirt comes with a picture of a whale on it or a picture of a dinosaur. What are all the different T-shirts Aunt Andrea could buy for Diana?

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86. Grab eight pennies and challenge your friend to this clever game! The rules are simple:
- On your turn, pick up 1, 2, or 3 pennies.
 - Then, your friend does the same.
 - The player who picks up the last penny loses.
- Now, the big question: Can you guarantee a win if you go first?
- A) Yes, if you choose 1
B) Yes, if you choose 2
C) Yes, if you choose 3
D) No guarantee

87. The number of amoebas in a jar doubles every minute. The jar is full of amoebas in 20 min. At what time was the jar half full?

88. Six animals live in the Noisy Apartments on Zoo Street. The apartment building has two floors, and there's a tree to the right of the building. Ella Elephant lives in the apartment next to the tree. Martha Monkey lives above Ella. Larry Llama lives between Martha Monkey and Gerry Giraffe. Sophie Seal lives next to Ella. Taffi Tiger lives to the left of Ella and Sophie. Where does each animal live in the apartment building?



89. Stella Spider is very tired! She has been climbing up the wall of a shower room all day. She started on the floor early this morning. Stella climbed up 7 tiles. Whoosh! Someone turned the shower on. Stella slid down 4 tiles. When the water was turned off, Stella began to climb again. She climbed up 10 tiles. Whoosh! Someone turned on the shower and Stella slid down 6 tiles. When she dried out, Stella began to climb again. She went up 13 tiles. At last she was at the top of the shower. If each tile is $\frac{1}{2}$ ft tall, how tall is the shower from floor to ceiling?

90. Zoobee has two kinds of flowers in his garden: dandelions and tiger lilies. Zoobee planted only tiger lilies, but dandelions came up too. There are 51 flowers in Zoobee's garden, and there are 15 more dandelions than tiger lilies. How many of the flowers are tiger lilies and how many are dandelions?