**2015 Georgia Milestones Assessment Practice Packet**

8th Grade

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Math

\_\_\_\_\_1. The triangles shown are congruent. Which of the following two sides MUST be proportional?

 A)CM and SV C)CT and VU

 B)CM and MT D)CT and MT

\_\_\_\_\_2. Susan has two boxes. Each box is 12 cm high, 12 cm long, and 12 cm wide.

 Which statement describes Susan's boxes?

 A)The boxes are congruent, but not similar. C)The boxes are similar and congruent.

 B)The boxes are similar, but not congruent. D)The boxes are only similar.



\_\_\_\_\_3. Which of these triangles are most likely similar?

 A)1 and 2 B)1 and 3 C)2 and 3 D)3 and 4

\_\_\_\_\_4. The figure shows part of a stepladder with two steps. Each step is

 parallel to the ground and attached to a diagonal rod.

 Which conclusion is true based on the given information and angle relationships?

 A)The value of x is 80 because vertical angles are congruent.

 B)The value of x is 80 because adjacent angles are congruent.

 C)The value of y is 100 because vertical angles are supplementary.

 D)The value of y is 100 because alternate exterior angles are supplementary.

\_\_\_\_\_5. What does  equal? A)48 B)  C)96 D) 

\_\_\_\_\_6. What is another way to express 42? A)  B)  C)  D) 

\_\_\_\_\_7. Joanne has 2a3 number of animals. Ronnie has 3a3 number of animals. Odessa has a4 number of animals. How many animals do Joanne, Ronnie, and Odessa have altogether?

 A)5a10 B)6a10 C)5a3 + a4 D)6a3 + a4

\_\_\_\_\_8. If  what is the value of x? A)2 B)4 C)6 D)8

\_\_\_\_\_9. A square-shaped playground has an area of 290 ft2. Approximately, how long is one

 side of the playground?

 A)12 ft B)17 ft C)36 ft D)73 ft

\_\_\_\_\_10. Which of the following best represents √39? A number between —

 A)3 and 4 B)6 and 7 C)7 and 8 D)8 and 10

\_\_\_\_\_11. Write .063 x 10-6 in scientific notation.

 A)6.3 x 10-4 B)6.3 x 10-8 C)63,000 D).000000063

\_\_\_\_\_12. Alyssa estimated that there are five hundred twenty billion grains of sand on a beach. How is this number written in scientific notation?

 A)5.2 × 109 B)5.2 × 1010 C)5.2 × 1011 D)5.2 × 1012

\_\_\_\_\_13. China has a population of approximately 1.3 x 109 people. The United States has a population of approximately 3 x 108 people. How many more people live in China than in the United States?

 A)107 people B)108 people C)109 people D)1010 people

\_\_\_\_\_14. The balance below shows the equation . What is the value of x?

 A)  B)2 C)  D)3

\_\_\_\_\_15. Simplify:

 A)  B)  C)  D) 

\_\_\_\_\_16. Linda is one year less than twice as old as her brother Paul. Which formula below correctly represents this situation?

 A) L = 1 – 2P B) L = 2(P – 1) C) L = 2P – 1 D) L = ½ (P – 1)

\_\_\_\_\_17. Alyssa is building a birdhouse. She needs a right triangle for the roof. Which triangle should Alyssa use?



 A) B) C) D)

\_\_\_\_\_18. If the equations y = 3x + 5 and y = 3x – 5 were graphed, which statement below would be true?

 A)The two lines will be parallel. C)The two lines would intersect at right angles.

 B)The two lines would intersect at the origin. D)The two lines would intersect at the point (5,-5).



\_\_\_\_\_19. A right triangle is shaded in the diagram. The area of two squares is shown. What is the area of the third square? A)21 ft2 B)35 ft2 C)441 ft2 D)1,241 ft2

\_\_\_\_\_20. What is the measure of the missing side of the sail?

 A)18 feet

 B)20 feet

 C)22 feet

 D)24 feet

\_\_\_\_\_21. Using the measures shown in the sketch, what is the length of the section of the ladder from the point where it rests on the ground to the point where it touches the house?

 A)4.8 ft. B)7 ft. C)17 ft. D)23 ft.

\_\_\_\_\_22. To secure a telephone pole, a steel cable will be attached to a ring on the pole 12 feet above the ground. If the cable is 15 feet long, how far from the base of the pole will the other end of the cable be anchored?

 A)3 feet B)9 feet C)12 feet D)15 feet

\_\_\_\_\_23. Sue left her house traveling due west towards the store. After 50 yards she traveled due north 120 yards to the store. When she left the store she cut across the field and traveled along a straight path. How much shorter was the path Sue took home then the path she took to the store?

 A)40 yards B)61 yards C)70 yards D)109 yards



\_\_\_\_\_24. Quadrilateral is shown on this coordinate plane. What is the length, to the nearest unit, of diagonal A)8 B)10 C)12 D)14

\_\_\_\_\_25. Ryan's house lies 6 miles due east of Adrian's house. Adrian's house is

 8 miles due south of Frank's house. What is the shortest distance from Frank's house to Ryan's house?

 A)8 miles B)10 miles C)14 miles D)24 miles



\_\_\_\_\_26. Seth can either ride his bike or walk to school. He can ride at

 5 mph for 0.6 miles on Elm Street and then 0.8 miles on Maple Street, or he can walk at 2 mph on the walking trail. How much longer should it take Seth to walk to school than to ride his bike?

 A)0.2 hours B)0.22 hours C)0.28 hours D)0.4 hours

\_\_\_\_\_27. If you wanted to find out how much water you could pour into a cylindrical bucket, which type of measurement would you want to calculate? A)perimeter of the bucket C)volume of the bucket

 B)area of the bucket D)circumference of the bucket

\_\_\_\_\_28. Four friends bought ice cream cones. Gabriella's cone had a radius of 2.5 inches, and a height of 3.5 inches. Julie's cone had a radius of 2.5 inches, and a height of 4 inches. Robert's cone had a radius of 2.2 inches, and a height of 5 inches. Luke's cone had a radius of 2.2 inches, and a height of 6 inches. Whose cone could hold the most ice cream?

 A)Gabriella B)Julie C)Robert D)Luke

\_\_\_\_\_29. Mary needs to buy a cylindrical trashcan liner that will fit into her trashcan. She knows that her trashcan has a volume of 300 cubic units and the diameter of her trashcan is 16 units. How high does the liner need to be to fit into her trashcan. Round your answer to the nearest whole number. A)0 units high B)1 unit high C)2 units high D)5 units high

\_\_\_\_\_30. Which list of ordered pairs is NOT a function?

 A) { (1, 1), (2, 3), (3, 4), (4, 5) } C) { (1, 1), (3, 1), (4, 2), (5, 3) }

 B) { (1, 1), (2, 2), (3, 3), (4, 4) } D) { (1, 1), (1, 3), (2, 3), (3, 4) }

\_\_\_\_\_31. Which of the following is the graph of a line with a slope of 1?



A) B) C) D)

\_\_\_\_\_32. The slope of the line through points (1, 1) and (1, 2) is:

 A)zero B)negative C)positive D)undefined



\_\_\_\_\_33. A city has set up a committee to estimate the area's population growth. To the right is a graph of the population increase in recent years. What will be the population in 2005 if this growth rate continues?

 A)290,000 C)320,000

 B)300,000 D)340,000

\_\_\_\_\_34. Which of these sets of ordered pairs would define a line with a negative slope?

 A) (5, 5) (0, 1) C) (3, 6) (5, 1)

 B) (2 ,3) (-4, -1) D) (2, 3) (7, 6)

\_\_\_\_\_35. When graphed, which situation's data would be linear?

 A) The temperature of the roof of a house every hour for 24 hours.

 B) A person's body temperature every hour for a year.

 C) The temperature of water rising 3°F every hour.

 D) The daily temperature of a city for a year.

\_\_\_\_\_36. Which line in the figure to the right has a y-intercept of 3 and a slope of -2? A)j B)k C)l D)m

\_\_\_\_\_37. What is the equation of the line passing through the points

 (5, 5) and (5, 10)? A) x= 5 C) y = x+ 5

 B) y= 5 D) y = x+ 10

\_\_\_\_\_38. In the table below, *f* is a linear function.

 When x= 8, what is the value of f( x)?

 A)19 B)20 C)22 D)26



\_\_\_\_\_39. The percentage of wheat grain eaten by mice in a farmer's field is shown to the right. Which of the following is the most likely percentage in 2005? A)0 B)14 C)25 D)45

\_\_\_\_\_40. Which equation describes the line through points A and B?

 A) x - 3y = -5

 B) x + 3y = -5

 C) x + 3y = 7

 D) 3x + y = 5

\_\_\_\_\_41. Jane charges $15 for each lawn she mows plus $5 per hour she works. Which graph models how much Jane charges for any one lawn?



 A) C)



 B) D)

\_\_\_\_\_42. Fill in the blank. All \_\_\_\_\_\_\_\_\_\_\_ are either similar or congruent to each other.

 A)circles B)triangles C)rectangles D)parallelograms

\_\_\_\_\_43. Which expression equals (4xy2z3)2?

 A)4x2y4z6 B)8x2y4z6 C)16x2y4z6 D)16x3y4z5

\_\_\_\_\_44. Find the value of 3x-2x2 when x = -3. A)-27 B)-18 C)0 D)9

\_\_\_\_\_45. Why is one of the square roots of any positive number less than zero?

 A)because a negative number times a negative number is a positive number

 B)because a negative number times a negative number is a negative number

 C)because a negative number times a positive number is a negative number

 D)because a negative number times a positive number is a positive number

\_\_\_\_\_46. A water tower holds 2,340,000 gallons of water. Express this number in correct scientific notation. A)2.34 × 10-6 B)23.4 × 105 C)2.34 × 106 D)2.34 × 107

\_\_\_\_\_47. If what is the value of x? A) -3 B) -1 C) 1 D) 3

\_\_\_\_\_48. What is the length of a diagonal of a rectangle with length 12 and width 5?

 A)7 B)13 C)17 D)60

\_\_\_\_\_49. On the coordinate plane to the right, line *P* represents a bike path.

 Each unit represents 2 yards. A deer is grazing at point G. What is the

 shortest distance between the deer and the bike path?

 A)8 yards B)10 yards C)12 yards D)16 yards

\_\_\_\_\_50. The shape of the moon is most like a……..

 A)cone. B)cylinder. C)pyramid. D)sphere.

\_\_\_\_\_51. Which of the following items is best described as a sphere?

 A)pizza B)soda can C)cereal box D)tennis ball

\_\_\_\_\_52. What is the volume of the cylinder to the right?

 A)138.16 cm3 B)276.32 cm3 C)552.64 cm3 D)2,210.56 cm3

\_\_\_\_\_53. Leonardo is making gift packages. He has a cone shaped package and a cylindrical package. The cone and cylinder have the same radius and height. He wants to use the package with the greatest volume. Which package should Leonardo use?

 A)the cone C)The cone and cylinder have equal volumes.

 B)the cylinder D)There is not enough information to tell.

\_\_\_\_\_54. Ashley is making a skateboard ramp in the shape of a triangular prism. The figure shows three dimensions of the ramp. What is the missing dimension in inches, x, of Ashley’s skateboard ramp? A)22 B)26 C)27 D)34

55. Line segments PS and QT intersect at point R . Point R is a vertex of right triangle RPQ .



**Part A:** What is the measure of angle PQR ? Show your work

and explain your answer.

**Part B:** What is the length of segment RQ ? Show your work.

56. The number of members of an online music company grew at a constant rate per year from 2006 to 2008. The table shows the numbers of members during the first and last years.

**Part A:** In 2006, each member paid $15 to join. How much money did the company receive from these members? Write your answer in scientific notation and show your work.

**Part B:** How many times greater was the number of members in 2008 than the number of members in 2006?Explain your answer.

**Part C:** What was the yearly rate of increase in the number of members? Write your answer in standard notation and explain your reasoning.

**Part D:** If the yearly rate you found in Part C remains the same, how many members will there be in 2015? Write your answer in scientific notation.

****57. Triangles DEF and JKL are shown.

**Part A:** What information is provided to show triangle DEF is similar to triangle JKL?

**Part B:** What series of transformations could be used to obtain triangle JKL from DEF ?