EOG Review Packet for 7th Grade Math

|  |  |
| --- | --- |
| 1. The rectangle below has a length of 7 centimeters and a width of 3 centimeters.    Three centimeters are subtracted from the length, and *c* centimeters are added to the width. The area of the new rectangle is 32 square centimeters. What is the value of *c*?   1. 1 centimeters 2. 3 centimeter 3. 5 centimeters 4. 10 centimeters | 2. A rectangle’s length is three more than two times its width. If the perimeter of a rectangle is 66 feet, what is the measurement of the length?   1. 10 inches 2. 21 inches 3. 23 inches 4. 45 inches |
| 3. Which expression is NOT equivalent to  8p + 6?   1. 2(4p + 3) 2. 2(4p - 1) + 10 3. -12p + 30 + 20p – 24 4. 2p + 4 + 5p + 2 + p | 4. Which expression is equivalent to 9m – 36?   1. 9(m – 36) 2. 8m – 12 + m + 48 3. 9(m + 4) 4. -12m + 4 + 21m – 40 |
| 5. The isosceles triangle below has a perimeter of 6x + 7. If the base is 5, what is the length of each of the unknown sides?     1. 3x + 1 2. 6x + 2 3. 3x + 2 4. x + 2 | 6. The triangle shown has a perimeter of  6x + 1.    What is the length of each side of the triangle?   1. 18x + 3 2. 2x + 3. 2x + 1 4. 3x + |
| 7. Which expression is NOT equivalent to  5(2a – 6) - 16a?   1. 6a – 30 2. 10a – 16a – 30 3. -30 – 6a 4. -6a – 30 | 8. Which expression is NOT equivalent to  ½(8p – 14) – 10p?   1. 4p – 7 – 10p 2. -7 + (-6p) 3. 4p – 7 – 5p 4. -6p – 7 |
| 9. What is the coefficient of m when the expression ¼(8m – 4) – 3m is simplified?   1. -2 2. -1 3. 1 4. 2 | 10. What is the coefficient of k when the expression -2(4k – 9) – 11k + 8 is simplified?   1. 3 2. -3 3. -7 4. -19 |
| 11. Paula is saving for a spring break trip. So far, she has saved $90. If she plans to save $15 each week (*w*) from her part-time job, which expression shows long must she save for until her savings are quadrupled?   1. 15w + 90 = 360 2. 4(15w + 90) = 360 3. 15w + 90w = 360 4. 4(15w) + 90 = 360 | 12. Several students conducted a survey of the type of snacks that their peers wanted for the field trip.   |  | | --- | | Survey Results | | Jaime reported that 4 out of 15 students wanted a salty snack. | | Laura reported that ¼ of the students wanted a sweet snack. | | Piper reported that .2 of the students wanted pizza. |   Based on the three surveys, which snack was the most desired?   1. A salty snack 2. A sweet snack 3. Pizza 4. Salty and sweet snacks are tied. |
| 13. Margie, Eric, and Connor helped their band stuff envelopes for a fundraiser. Margie has stuffed 96 out of 144 envelopes. Eric has stuffed 62% of his envelopes. Connor has stuffed ¾ of his envelopes. If each student started with the same amount, who has the most envelopes left to stuff?   1. Margie 2. Eric 3. Connor | 14. What is the solution set for the inequality,  4(p – 3) – 12p ≥ 36   1. p ≤ 6 2. p ≥ 6 3. p ≤ -6 4. p ≥ -6 |
| 15. The perimeter of the quadrilateral WXYZ is 82 inches. What is the length of segment XY?     1. 4 inches 2. 12 inches 3. 20 inches 4. 26 inches | 16. Junie earns $7.25 working at The Dollar Mart. Junie is saving the money that she earns to purchase a computer that costs $450. Which inequality represents the number of hours (h) that Junie would have to work in order to have enough money to buy the computer?   1. 7.25 + h > 450 2. 7.25h > 450 3. 7.25h ≥ 450 4. 450 – h ≥ 7.25 |
| 17. Consider these inequalities.   |  | | --- | | 1. -5k > -30 2. -2k + 9 < 0 3. 3k > k + 14 |   For which of these inequalities is k = 7 a solution?   1. I only 2. II only 3. I and III 4. II and III | 18. An algebraic inequality is written in words.  “The product of 15 and a number, increased by 8 is at most 44.”  Which choice matches the statement?   1. 15n + 8 < 44 2. 15n + 8 > 44 3. 15n + 8 ≤ 44 4. 15n + 8 ≥ 44 |
| 19. Analyze the inequality.    Which scenario best explains the inequality?   1. Kayla has sold at least 8 boxes of cookies. 2. Linda answered more than 8 problems correctly. 3. Parker walked no more than 8 miles. 4. John slept fewer than 8 hours. | 20. Find the solution set for the inequality. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. A 5-color spinner is used in an experiment, and the frequency of landing on each different color is recorded.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Red | Orange | Yellow | Green | Blue | | 17 | 8 | 5 | 15 | 10 |   Based on the experimental results, how many spins would you expect to land on green in a new experiment with 77 trials?   1. 19 2. 21 3. 22 4. 23 | 2. A 5-color spinner is used in an experiment, and the frequency of landing on each different color is recorded.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Red | Orange | Yellow | Green | Blue | | 14 | 8 | 11 | 5 | 12 |   Based on the experimental results, how many spins would you expect to land on orange *or* blue in a new experiment with 75 trials?   1. 12 2. 16 3. 18 4. 30 |
| 3. A teacher uses the spinner for a game.  [http://t2.gstatic.com/images?q=tbn:ANd9GcS0WGRFyx5XS6xC3KxXBfEG4WifUmP2nVRIa19o37BWwAqZm-gO](http://www.google.com/imgres?imgurl=http://www.regentsprep.org/Regents/math/algtrig/ATS7/spinner9.jpg&imgrefurl=http://www.regentsprep.org/Regents/math/algtrig/ATS7/BPrac.htm&docid=_BSKjNsx0uV-TM&tbnid=xngZVi2Pk7pgGM&w=131&h=132&ei=SfQzUeyZD4fm8gSTm4DQAQ&ved=0CAkQxiAwBw&iact=rics)  If you spin a number that is more than a 5 you get a point. What statement is true about the game?   1. The chance of getting a point is highly likely. 2. The chance of getting a point is impossible. 3. The chance of getting a point is less likely. 4. The chance of getting a point is certain. | 4. Webb University analyzed the number of 2-point shots that a high-school senior (senior A) made during the last basketball season. They created the box-and-whisker plot below.    The university was also looking at a different high-school seniors (senior B) 2-point shots and determined his interquartile range was 22.  Which statement about the two high-school seniors must be true?   1. Senior A must have a larger box. 2. Senior B must have a larger box. 3. Senior A must have a higher median. 4. Senior B must have a greater range. |
| 5. A 5-color spinner is used in an experiment, and the frequency of landing on each different color is recorded.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Red | Orange | Yellow | Green | Blue | | 14 | 8 | 11 | 5 | 12 |   What is the experimental probability of spinning a red or a blue?   1. .24 2. .28 3. .52 4. 1 | 6. Henry received the following five scores on his math quizzes: 98, 89, 84, 74, and 95. What is the relationship between Henry’s mean and median quiz score?   * 1. The mean is one point lower than the median.   2. The mean is four points lower than the median.   3. The mean is one point higher than the median.   4. The mean is four points higher than the median. |
| 7. Look at the spinner.  [http://t2.gstatic.com/images?q=tbn:ANd9GcS0WGRFyx5XS6xC3KxXBfEG4WifUmP2nVRIa19o37BWwAqZm-gO](http://www.google.com/imgres?imgurl=http://www.regentsprep.org/Regents/math/algtrig/ATS7/spinner9.jpg&imgrefurl=http://www.regentsprep.org/Regents/math/algtrig/ATS7/BPrac.htm&docid=_BSKjNsx0uV-TM&tbnid=xngZVi2Pk7pgGM&w=131&h=132&ei=SfQzUeyZD4fm8gSTm4DQAQ&ved=0CAkQxiAwBw&iact=rics)  What is the probability of spinning an even number?   1. Certain 2. Impossible 3. Equally likely 4. Less likely | 8. There are three flavors of lollipops in the candy bag, watermelon, apple, and cherry. If the probability of getting a watermelon was ¼ and the probability of getting an apple was , what is the probability of getting a cherry?   1. 0 |
| 9. A jar contains 12 green tokens, 6 red tokens, and 2 black tokens. You select a token without looking and then put it back. If you were to do this 10 times, what is the best prediction possible for the number of times you would pick a red token?   1. 2 2. 3 3. 6 4. 12 | 10. Yasmine tossed a coin 20 times. It lands on heads 14 times and tails on 6 times. What is the relative frequency of landing on tails?   1. 6% 2. 14% 3. 30% 4. 70% |
| 11. Stacey throws a dart at the board. What is the probability it lands in the circle?     1. 3% 2. 31% 3. 78.5% 4. 90.2% | 12. Kora throws a dart at the board. What is the probability it does not land in the circle?     1. 21.5% 2. 25.5% 3. 78.5% 4. 31.8% |
| 13. Laura has three beads – blue, red, and yellow- that she plans to string on a bracelet. How many different ways could Laura order the beads.   1. 3 2. 6 3. 9 4. 27 | 14. At Hot Dog City, Jacob can pick between four different kinds of hot dogs and three different sides. How many combinations can he make if he only orders one hot dog and one side for a meal?   |  |  | | --- | --- | | **Hot Dogs** | **Sides** | | Chicago Dog | French Fries | | Philly Dog | Cole Slaw | | Texas Dog | Baked Beans | | Cali Dog |  |  1. 4 2. 8 3. 12 4. 16 |
| 15. Pedro went to a deli for lunch. For the lunch special, he could purchase one sandwich, one drink, and one dessert. How many combinations could Pedro possibly select?   |  |  |  | | --- | --- | --- | | **Sandwich** | **Drink** | **Dessert** | | Ham | Coke | Cake | | Turkey | Water | Pie | | Roast Beef | Sweet Tea |  |  1. 18 combinations 2. 16 combinations 3. 15 combinations 4. 12 combinations | 16. The local cupcake shop allows customers to create their own cupcake creations by selecting one cake flavor and one icing flavor. The cake shop offers vanilla, chocolate, strawberry, cookie dough, and lemon cake flavors. They offer vanilla, chocolate, peanut butter, butterscotch, cream cheese, and strawberry icings. How many possible cupcake/icing combinations do customers have?   1. 5 2. 6 3. 11 4. 30 |
| 17. Harmony was selecting her outfit for the next day. The table below represents the choices she has for the color of shirt, pants, and shoes.   |  |  |  | | --- | --- | --- | | **Shirt** | **Pants** | **Shoes** | | Pink | Jeans | Tennis | | Purple | Corduroy | Boot | | Blue | Khaki | Flip Flops | | Green |  |  |   Which expression could Harmony use to find the total number of different combinations of outfits that she can wear?   1. 4 + 3 + 3 2. 4 + 3 + 3 x 3 3. 4 x 3 x 3 4. (4 + 3 + 3) x 3 | 18. These four cards are placed into a bag and two are drawn out by Danny.    What is the probability of pulling two cards out of the bag that have a sum more than 11?   1. 1 |
| 19. There are 5 family members that each want to play war against each other one evening. How many total games must be played in order for all of the family members to play each other at least once?   1. 5 2. 7 3. 9 4. 10 | 20. Given the data set below, what is the mean absolute deviation?   |  |  | | --- | --- | | 58 | 72 | | 88 | 66 | | 40 | 80 | | 60 | 48 |  1. 64 2. 12.5 3. 8.5 4. 8 |

|  |  |
| --- | --- |
| 1. Which situation below describes the number line shown?     1. The temperature outside rose 5 degrees and dropped 2 degrees 2. Harper earned $7 helping his dad, then spent $5 on lunch. 3. Lara spent $7 on a new shirt, then spent $5 dollars on a new hat. 4. Katie walked 7 blocks to her friend’s house, then walked 2 blocks back. | 2. Which statement is true of points X and Y on the number line?     1. X + Y < 0 2. XY > -3 3. X – Y > 0 4. Y ÷ X > 0 |
| 3. Which math sentence could be used to show the combined value of the tokens?     1. 11 + (-10) = 1 2. 11 + (-10) = 21 3. 11 – (-10) = 1 4. 11 – (-10) = 21 | 4. Which math sentence could be used to show the combined value of the tokens?     1. -6 + 9 = -3 2. -6 + 9 = 3 3. -6 – 9 = -15 4. -6 – 9 = 15 |
| 5. The daily high temperatures in Anchorage, Alaska last week are listed in the chart below:   |  |  | | --- | --- | | Day | Temperature | | Monday | 15℉ | | Tuesday | 8℉ | | Wednesday | -6℉ | | Thursday | -8℉ | | Friday | -19℉ |   What was the average daily low temperature in Anchorage for those days?   1. -10℉ 2. -5℉ 3. -2℉ 4. 2℉ | 6. Mikayla and her two friends made a pizza and cut it into 8 equal-sized slices. If Mikayla and her friends ate 5 slices of pizza, what decimal represents the portion of pizza that remains?   1. .5 2. .375 3. .35 4. .625 |
| 7. Harold made a pie for after dinner. If he ate ½ of the pie and his wife Sara ate ¼ of the pie, which picture could represent the amount of pie left? The shaded region of each circle shows how much pie was left over. | 8. Harold made a pie for after dinner. If he ate ¼ of the pie and his wife Sara ate of what is left, which picture could represent the amount of pie left? The shaded region of each circle shows how much pie was left over. |
| 9. Which mixed number is equivalent to 5.292 | 10. Which expression has the greatest value?   1. -9 – 8 2. -9 + 8 3. 8 – 9 4. 8 – (-9) |
| 11. Navya has 10½ feet of craft wire that she uses to make earrings. If each pair of earring requires ¾ foot of wire, how many pairs of earrings is Navya able to make?   1. 1 2. 9 3. 10 4. 14 | 12. While visiting Chicago, Jenny used a taxi for transportation. The taxis charged her $.95 per city block. If the taxis charged her a total of $25.65 for transportation, how many total city blocks did she travel?   1. 24.7 blocks 2. 25 blocks 3. 26 blocks 4. 27 blocks |
| 13. Sasha agreed to make 4½ dozen cupcakes for her friend’s big birthday batch. So far, she has baked and decorated of the cupcakes. If there are 12 cupcakes in a dozen, how many cupcakes are ready for the party?   1. 1.5 cupcakes 2. 4 cupcakes 3. 18 cupcakes 4. 36 cupcakes | 14. The distance from Jessie’s house to the neighborhood dog park is 1¼ miles. If Jessie and her dog ran of the way there, how far did they run?   1. mile 2. ½ mile 3. mile 4. 1 mile |
| 15.  Which expression has a value of -19?   1. (8 – 9) – 18 2. 8 – (-9) 3. -9 – 8 4. -1 – (-17) | 16. Laura’s gym membership fee of $45 is automatically deducted from her bank account each month. If she must also pay a one-time yearly maintenance fee of $75, which integer would represent the total deductions for one year of gym membership?   1. - $120 2. - $465 3. - $540 4. - $615 |
| 17. Tanya entered a hotel elevator on the 7th floor. She rode down 2 floors, up 5 floors, down 6 floors, up 7 floors and down 2 floors. On what floor did Tanya get off the elevator?   1. 6th floor 2. 7th floor 3. 9th floor 4. 11th floor | 18. Find the product of the following expression:     1. 624 2. 620 3. 62.4 4. 64 |
| 19. Which is equivalent to the expression  (45 – 67) – 98   1. -120 2. -76 3. 14 4. 210 | 20. At the beginning of the week, the temperature was 14℉. During the week, it decreased by 25℉. What was the temperate by the end of the week?   1. 39℉ 2. 11℉ 3. -11℉ 4. -39℉ |

**7th Grade Formulas Students Might Need to Know for the EOG**

**GEOMETRY FORMULAS**

|  |  |
| --- | --- |
| ***Name of Formula*** | ***Formula*** |
| Perimeter of a Rectangle | P = 2L + 2W |
| Circumference of a Circle | C = 2πr or C = πd |
| Area of a Triangle | A = ½ bh |
| Area of a Trapezoid | A = ½ h (base1 + base2) |
| Area of a Circle | A = πr2 |
| Area of a Rectangle | A = lw |
| Surface Area of a Rectangular Prism | SA = 2lw + 2lh + 2wh |
| Surface Area of a Cube | SA = 6s2 |
| Surface Area- other prisms and pyramids | Add the area of all faces |
| Volume of a Rectangular Prism | V = lwh |
| Volume of Triangular Prism | V = ½ lwh |
| Volume – other prisms | V = Bh (Big B = area of the base) |

**Simple Interest: I = P x r x t**

I= Interest P= Principle r = rate (%) t = time (years)

**Distance: D = r x t** D= Distance r= rate t= time

**Percent Proportion**:

**Percent of Change**:

**Percent Error**