Practice Test for the General Knowledge Math Test

Directions: Read each item and select the best response.

Section 1 – Number Sense

1. Order the following series of numbers from smallest to largest. $\sqrt{67}, -2^3, 5^2, \frac{19}{3}$
   
   A. $\sqrt{67}, -2^3, 5^2, \frac{19}{3}$
   
   B. $-2^3, \frac{19}{3}, \sqrt{67}, 5^2$
   
   C. $-2^3, \sqrt{67}, 5^2, \frac{19}{3}$
   
   D. $\frac{19}{3}, -2^3, \sqrt{67}, 5^2$

2. Order the following series of numbers from smallest to largest.
   $5.3 \times 10^{-3}, 1.2 \times 10^2, 2.7, 2.07$

   A. $5.3 \times 10^{-3}, 1.2 \times 10^2, 2.7, 2.07$
   
   B. $1.2 \times 10^2, 2.7, 2.07, 5.3 \times 10^{-3}$
   
   C. $5.3 \times 10^{-3}, 2.07, 2.7, 1.2 \times 10^2$
   
   D. $1.2 \times 10^2, 2.07, 2.7, 5.3 \times 10^{-3}$

3. Simplify $3(2+6)^2 \div 6$

   A. 3  B. 9  C. 32  D. 60

4. Simplify $5 + 6 \div 2 - 1$

   A. 7  B. 8  C. 4.5  D. 11

5. Jack is taking medications for a recent illness. Every 6 hours he takes an antibiotic, every 4 hours he takes a pain reliever, and every 3 hours he drinks a glass of water. If he starts this regime at 10 am, at what time will he be taking both medicines and a glass of water?

   A. 12:00 noon  B. 4:00 P.M.  C. 6:00 P.M.  D. 10:00 P.M.

6. Three lengths of 2.25 feet each are cut from a board 12 feet long. How long is the remaining piece of wood?

   A. 9.75 feet  B. 9 feet  C. 5.25 feet  D. 1.05 feet
7. $12 + 6 \div 2 \times 9$ What is the correct order of operations for this problem?
   A. $+ \times \div$ B. $\times + \div$ C. $\div + \times$ D. $\div \times +$

8. You purchase a house for $124,000 and the next year sell it for $150,000. What would be the percent of increase or decrease?
   A. 21% increase   B. 21% decrease   C. 17% increase   D. 17% decrease

**Section 2 - Measurement**

9. A swimming pool is 15 by 30 feet and a consistent 5 feet deep. You are painting the walls and floor of the pool. If a gallon can of paint covers 250 square feet, how many gallon cans would you need to buy?
   A. 2 gallons
   B. 3 gallons
   C. 4 gallons
   D. 5 gallons

10. You need to fill the pool with water. If 1 cubic foot equals 7.48 gallons of water, how many gallons will it take to fill the pool in the previous problem (15 feet by 30 feet by 5 feet)?
    A. 374 gallons
    B. 16830 gallons
    C. 300.8 gallons
    D. 2250 gallons

11. Pencils sell for 98 cents per dozen. How much more per pencil does it cost to buy 5 for 50 cents?
    A. 8.17 cents   B. 10 cents   C. 1.83 cents   D. 2 cents

12. The testing center starts the test at 8:40 A.M. If you have 90 minutes to complete the test, when does the test end?
    A. 9:30 A.M.
    B. 10:10 A.M.
    C. 10:40 A.M.
    D. 10:30 A.M.

13. The distance between Brookville and Center City is 17.25 cm. on the map. If 1 cm is equal to 20 miles, how far is it between the two cities?
    A. 37.25 miles
    B. 340 miles
    C. 345 miles
    D. 350 miles
14. The Candy Shoppe sells a box of mixed chocolates. The box of chocolates contains 12 ounces of chocolate covered caramels, 14 ounces of chocolate covered cherries, 6 ounces of chocolate covered raisons. How many pounds are in the box of chocolates?
   A. 3.2 pounds  
   B. 2 pounds  
   C. 3.6 pounds  
   D. 3 pounds

15. According to the rain gauge, how much rain has fallen?

   A. 2.7 inches  
   B. 2.2 inches  
   C. 2.5 inches  
   D. 2.4 inches

16. Early civilizations used a cubit as a unit of measure. A cubit is the length from the middle finger to the elbow. Estimate the average height of a man in cubits
   A. 6 cubits  
   B. 4 cubits  
   C. 2 cubits  
   D. 10 cubits

17. Jay traveled from Miami to Jacksonville, a distance of 320 miles. He left Miami at 8:00 A.M., stopped for lunch for 30 minutes, and stopped for two 15 minute breaks at rest areas. He arrived in Jacksonville at 2:15 P.M. What was his average rate of speed during his travel time?
   A. 51.2 mph  
   B. 62.1 mph  
   C. 53.3 mph  
   D. 60.9 mph

18. Jackie is building a doll house with a scale of 1 inch equals 12 inches. She wants to put a sofa in the doll house living room. If a full size sofa is 72 inches, how long will the doll house sofa be?
   A. 7.2 inches  
   B. 6 inches  
   C. 5 inches  
   D. 4 inches
Section 3 – Geometry and Spatial Sense

19. If a quadrilateral has exactly one pair of sides parallel it must be a:

A. trapezoid  B. rhombus  C. parallelogram  D. rectangle

20. Find the slope of AB.

A. $\frac{2}{3}$  B. $\frac{-2}{3}$  C. $\frac{-3}{4}$  D. $\frac{3}{4}$

21. Find the length of AB.

A. 3  B. 4  C. 5  D. 7

22. In which quadrant is the point (4, -2) located?

A. I  B. II  C. III  D. IV

23. Two rectangles are similar. If the length of the larger is 8 and the width is 5, find the width of the smaller rectangle if the length is 6.

A. 3  B. 3.5  C. 3.75  D. 9.8

24. Find the slope of AB if A is (-2,0) and B is (3,2)

A. $\frac{-5}{2}$  B. $\frac{2}{5}$  C. $\frac{-2}{5}$  D. $\frac{5}{2}$
25. A square canopy is supported on 4 corners by poles. Each pole is supported by 3 cables, each cable is attached to the top of the 12 foot pole and 5 feet away from the base. Find the total length needed for the all of the cables.

   A. 144 ft   B. 156 ft   C. 51 ft   D. 204 ft

26. If the diagonals of a quadrilateral are perpendicular and equal, the quadrilateral is a

   A. rhombus   B. square   C. parallelogram   D. rectangle

27. What is the reflection of point A across the y-axis?

   A. (3,2)   B. (-2, -3)   C. (-2, 3)   D. (-3,-2)

Section 4 Algebraic Thinking

28. Find the next term of the sequence. \(-1, \frac{1}{2}, -\frac{1}{4}\)

   A. 4   B. \(\frac{1}{6}\)   C. \(-\frac{1}{6}\)   D. \(\frac{1}{8}\)

29. Find the formula for the sequence. -5, -1, 3, 7, ...

   A. \(A_n = n - 5\)   B. \(A_n = 4n - 9\)   C. \(A_n = -4n + 9\)   D. \(A_n = -5n\)

30. Joan has a bag of coins. She has three times as many quarters as dimes. How would you represent her total sum of money if d equals the number of dimes?

   A. \(d + 3d\)   B. \(10d + 25(3d)\)   C. \((10d + 25)3\)   D. \((10d + 25)3d\)
31. Elections at Meadows Middle School for Class President

<table>
<thead>
<tr>
<th></th>
<th>Chris</th>
<th>Pat</th>
<th>Jo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>24</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Girls</td>
<td>33</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>31</td>
<td>12</td>
</tr>
</tbody>
</table>

What percent of the boys voted for Chris?

A. 24%  B. 49%  C. 57%  D. 50%

32. Solve $3x + 7 = -2x - 8$

A. -1  B. 1  C. 3  D. -3

33. Solve the system of equations.

\[ y = 2x - 4 \]
\[ y = 5x + 8 \]

A. (-4, -12)  B. (4, -12)  C. (4, 12)  D. (-4, 12)

34. Which of the following is NOT a solution to the equation? $2x + 3y = 24$

A. (9, -2)  B. (0, 8)  C. (12, 0)  D. (6, 4)

35. Which of the following is a solution to the inequality? $3x > -y + 7$

A. (-4, 3)  B. (2, 1)  C. (3, 9)  D. (-1, -5)

36. Which is the solution to the system of inequalities?

\[ y < 2x + 7 \]
\[ y \geq -x + 3 \]

A. (-1, -4)  B. (1, 6)  C. (-4, -5)  D. (0, 2)
37. Most accidents occur between:
   A. 6 and 10 A.M.
   B. 6 and 10 P.M.
   C. 2 and 6 P.M.
   D. 2 and 6 A.M.

38. Using the following data: 12, 13, 9, 3, 5, 3, 4; which of the following is NOT true?
   A. mode = 3  B. median = 5  C. mean = 11  D. range = 10

39. If the data in the previous problem changed and the 9 is replaced by a 10, which of the following values would change?
   A. mode   B. median   C. mean   D. range

40. Al’s pizza employs 10 people: 1 manager at $30,000, 2 cooks at $20,000 each, 2 dishwashers at $5,000 each, and 5 delivery persons at $4,000 each. If Al wants to brag about how much he pays his employees, he would use which measure?
   A. mode   B. median   C. mean   D. range

41. Bob and Carol are planning on having three children. What is the probability that the three children will all be boys?
   A. $\frac{1}{3}$  B. $\frac{1}{8}$  C. $\frac{1}{9}$  D. $\frac{1}{27}$
42. Your sock drawer is a mess and contains 10 white socks, 12 black socks, and 4 red socks. How many sox would you have to pull out of the drawer to be sure you have a pair?

A. 2   B. 3   C. 4   D. 5

43. What is the probability that the first sock you pull out will be black and the second sock you pull out (without replacing the first sock) will be black?

A. \( \frac{23}{26} \)   B. \( \frac{132}{650} \)   C. \( \frac{12}{26} \)   D. \( \frac{132}{676} \)

44. The Soda Shoppe Sundae Special offers 3 flavors of ice cream with your choice of 4 sauces, and 2 toppings. How many different varieties of Sundaes are available?

A. 12   B. 8   C. 24   D. 48

45. In how many ways can five children be placed into five seats in the back of a van?

A. 5   B. 10   C. 20   D. 120
Answers to practice test
1. B
2. C
3. C
4. A
5. D
6. C
7. D
8. A
9. C
10. B
11. C
12. B
13. C
14. B
15. D
16. B
17. D
18. B
19. A
20. D
21. C
22. D
23. C
24. B
25. B
26. B
27. C
28. D
29. B
30. B
31. B
32. D
33. A
34. A
35. C
36. B
37. B
38. C
39. C
40. C
41. B
42. C
43. B
44. C
45. D