



Mental Math

Test #343/362

Name: _____

ID Number: _____

School: _____

Division (circle one):

Mu Alpha Theta Sponsor

- _____ 1. A 2 hr, 27 min flight is showing a 1 hr, 46 min movie, but the movie can't be shown during the initial or final 15 minutes of the flight. Will they finish the movie?
- _____ 2. The product of four consecutive positive even integers is 5760. What is the second greatest of these integers?
- _____ 3. Find $f(2)$ if $f(x) = x^2 - 4x + 12$
- _____ 4. At 4:40, what is the degree measure of the larger angle formed by the hour and minute hands of a clock?
- _____ 5. What is the inverse statement of "If this, then that."?
- _____ 6. If A is acute and $\sin A = \frac{1}{2}$, then what is the value of $\cos A$?
- _____ 7. Evaluate: 5^3
- _____ 8. Find the median of the data set:
3, 18, 7, 44, 24, 27
- _____ 9. What value of x satisfies $3x + 4 = 5x$?
- _____ 10. Evaluate: $10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2$
- _____ 11. A plane has 137 seats, 11 of which are first class. What is the probability of being randomly assigned a first class seat?
- _____ 12. Express as a reduced fraction: 0.24
- _____ 13. What is 14% of 50% of 100?
- _____ 14. A square with perimeter 24 encloses what area?
- _____ 15. If a and b are the roots of $2x^2 - 5x + 6$, find the value of $a^2b + ab^2$.
- _____ 16. Find the least prime number $x > 60$.
- _____ 17. A 2×3 matrix and a 4×2 matrix are multiplied, yielding a third matrix of what dimensions?
- _____ 18. Simplify: $\left((81)^{0.5}\right)^{0.5}$
- _____ 19. What is the y-intercept of $2x + 7y = 4$?
- _____ 20. How many combinations of at least 1 of 12 pizza toppings can I put on a pizza?
- _____ 21. Find x if $3^3 + 3^3 + 3^3 = 3^x$.
- _____ 22. It will take 267 gallons of gas to fill up a yacht's half-full gas tank. What is the capacity of the tank in gallons?
- _____ 23. If a frog catches 4 flies per day, how many flies did it catch in all during this past January, February, and March?
- _____ 24. Helen works twice as fast as Joan, who works twice as fast as Jenny. If Jenny can do the job in 17 hours, how many hours will it take Helen to do the same job?
- _____ 25. Find the minimum enclosed area of a circle passing through $(3,3)$ and $(-3,-3)$.
- _____ 26. I have 1 each of a nickel, penny, and silver dollar; 2 dimes; and 4 quarters. How many dollars and cents do I have?
- _____ 27. My trail mix is composed solely of almonds and raisins. I have 4 almonds for every raisin and 65 almonds and raisins total. How many raisins do I have?
- _____ 28. What time is 340 minutes before 5:23 pm?
- _____ 29. Find the sum of the 3 least positive prime numbers.
- _____ 30. When 201 is divided by 7, what is the remainder?
- _____ 31. Evaluate: $\sqrt{\sqrt{\sqrt{390,625}}}$
- _____ 32. Solve for x : $35x^2 - x - 12 = 0$
- _____ 33. 12% of 22% of an item is equivalent to what single percentage of the item?
- _____ 34. Evaluate: $\log_2 4096$
- _____ 35. Find the numerator of the simplified sum:
 $\frac{1}{x} + \frac{2}{y} + \frac{3}{xy}$
- _____ 36. Simplify: $|x| - |-x|$
- _____ 37. A circle with enclosed area 256π has what circumference?
- _____ 38. Evaluate: $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8} \cdot \frac{8}{9}$
- _____ 39. Find the hundreds digit of $10!$.
- _____ 40. A hexagon with apothem $7\sqrt{3}$ encloses what area?