1. Given that the 15th number in the Fibonacci sequence is 610 and the 16th number is 987, find the sum of the first 15 fibonacci numbers.

Answer: 1596

2. The amount of fluid in a container is decreasing at a constant rate. If the amount of fluid decreases by 40% in the first 10 seconds, how much does it decrease to the nearest percent in the next 10 seconds?

Answer: 67

3. For some number x, x+1/x=10. What is x^3+1/x^3?

W) 970

X) 980

Y) 990

Z) 1000

Answer: W

4. Which of the following is closest to the sum of the first 5 terms in the geometric series with first number 1/2 and ratio 1/3.

W) 2/3

X)3/4

Y)1

Z)4/3

Answer: X

5. Find the sum of the positive integers from 1 to 99.

Answer: 4950

6. If cos(theta)=sqrt(1/3), find tan(theta) in lowest terms.

Answer: sqrt(2)

7. An unfair coin has probability 2/3 of landing on heads. What is the probability of flipping the coin three times and receiving either three heads or three tails.

Answer: 1/3

8. Find the sum of all complex numbers whose 8th powers are equal to 1.

Answer: 0

9. Which of the following four statements is or are true about cos(2\*theta)

I. cos(2\*theta)=cos(theta) when theta equal x\*pi for any integer x

II. cos(2\*theta)=cos^2(theta)-sin^2(theta)

III. cos(2\*theta)=2\*cos^2(theta)-1

IV. cos(2\*theta)=2\*sin^2(theta)+1

Answer: II and III

10. Convert the hexadecimal 89F to binary.

Answer: 100010011111

11) Math Bonus short answer: What is the area of an ellipse with major axis 10 and minor axis 8?

Answer: 20pi

12. Find the sum of the roots of the equation x^3-4x^2+5x-1

Answer: 4

13. The cross product is

W) associative and commutative

X) associative and not commutative

Y) not associative and commutative

Z) not associative and not commutative

Answer: Z

14. The number of people in a town grows exponentially. If when t=0 there are 50 people and when t=1 there are 150 people, how many people will be in the town when t=4?

Answer: 4050

15. The probability of having x children in a town is 1/(2^x). Find the expected value of the number of children that a person will have.

Answer: 2

16. The radius of the incircle of a right triangle is 2 and its perimeter is 24. Find the area of the triangle.

Answer: 24

17. A triangle with integer side lengths has two side lengths 7 and 8. Find the number of possible values for the length of the third side.

Answer: 13

18. What is the probability of drawing either an ace or a heart, but not both in a standard deck of 52 cards?

Answer: 15/52

19. Find the sum of the factors of 65536, or 2 to the 16th power:

Answer: 131071

20. What is the area of the region determined by the equations |x|<=4 and |y|<=3

Answer: 48

21. What integer between 1 and 100 has 9 factors

Answer: 36

22. What is the sum of the first 10 squares, ranging from 1 to 100?

Answer: 385

23. What is the sum of the first ten rows of pascals triangle, given that the 1 at the top is not part of the triangle.

Answer: 2047

24. How many two digit prime have the sums of their digits equal to 7?

Answer: 2

25. In science bowl, answering a toss up scores 5 points, and answering a bonus scores 11 points. Given that there are no other ways to score points, what is the highest integer that can never be a score for a team.

Answer: 39