1. Once upon a time, in a magical land, there lived a couple that desperately wanted a child, but the probability of them having a child was . What are the odds of them having a child?

**A) 97:100 B) 3:97 C) 3:100 D) 3:103 E) NOTA**

2. The side view of Rapunzel's parents' cottage is a square with a side length of 15 ft under an isosceles triangle with a height of 4 ft and a base of 20 ft. What is the area of the figure in ft2?

4ft

20ft

15ft

15ft

**A) 265 B) 285 C) 305 D) 380 E) NOTA**

3. Mother Gothel's garden contains rampion, daffodils, and cauliflower. 3 rampions are worth 5 daffodils and 2 daffodils are worth 7 cauliflower. How many cauliflower are worth 18 rampions?

**A) 21 B) 35 C) 42 D) 105 E) NOTA**

4. Rapunzel's mother has become addicted to the delicious rampion in Mother Gothel's garden. She needs the square of the amount she ate on the previous day to be satisfied. She ate 2 cups on the first day. How many cups will she eat on the fifth day, assuming she always eats just the required amount?

**A) 65,536 B) 256 C) 16 D) 4 E) NOTA**

5. In order to get his wife some more rampion, Rapunzel's dad has to climb over the wall surrounding Mother Gothel's garden. He starts climbing the wall at 8:30 pm and it takes him 7 minutes to climb up the wall and 2 minutes to climb down. What time will it be when he finishes climbing back down the wall after he spends 22 minutes in the garden?

**A) 8:48 pm B) 8:52 pm C) 9:01 pm D) 9:10 pm E) NOTA**

6. Rapunzel's parents traded her for unlimited rampion. Mother Gothel keeps her locked away in a tall tower. She wants to build a fence around Rapunzel's tower that's 16 feet long and 20 feet wide. She will put each post 2 feet apart and have one in each corner. How many posts will she need?

**A) 36 B) 40 C) 72 D) 76 E) NOTA**

7. One day, Rapunzel made Mother Gothel answer a math question before she would let down her hair. She asked her what the next term in this sequence was.

1, 8, 27, 64, 125, ?

Mother Gothel got it correct and was able to climb up. What was her answer?

**A) 36 B) 200 C) 216 D) 1,296 E) NOTA**

8. Rapunzel's magical hair makes Mother Gothel look half of her real age. If she looks 35 in the current year of 2015, when will she look 42?

**A) 2018 B) 2022 C) 2025 D) 2029 E) NOTA**

9. Which of the following does not satisfy the following inequality?

**A) -12 B) -4 C) -3 D) 0 E) NOTA**

10. Rapunzel's hair is currently 72 feet long and is growing at a rate of 6 inches per day. If today is a Tuesday, and Rapunzel's hair as already grown 6 inches today, what day of the week will it be when her hair becomes exactly 80 feet long?

**A) Monday B) Wednesday C) Friday D) Sunday E) NOTA**

11. Which of the following is rational?

**A) π B) C) D) E) NOTA**

12. Rapunzel's tower is a right circular cylinder with a height of 50 feet and a diameter of 18 feet. What is the volume of the tower in ft3?

**A) 4,050π B) 4,050 C) 450π D) 450 E) NOTA**

13. Write 0.00000002015 in scientific notation.

**A) 2015×10-11 B) 2.015×10-8 C) 2015 D) 2.015×108 E) NOTA**

14. Mother Gothel can climb Rapunzel's hair at a rate of 7 feet every 2 minutes. How long will it take her to reach Rapunzel in minutes if Rapunzel's hair is 77 feet long? Assume she has to start at the end of her hair.

**A) 5.5 B) 11 C) 22 D) 44 E) NOTA**

15. Rapunzel has a pot of flowers that double in number every hour. If the pot will be full in 10 hours, in how many hours will it be one-quarter full? Assume all flowers are the same size.

**A) 2.5 B) 5 C) 8 D) 40 E) NOTA**

16. Rapunzel has 2 pens for every 5 pencils she has. If she has 100 pencils, how many pens and pencils does she have total?

**A) 40 B) 80 C) 140 D) 200 E) NOTA**

17. Solve for

**A) -7 B) -3 C) 1 D) 2 E) NOTA**

18. Rapunzel has 3 tops, 4 skirts, and 2 pairs of shoes. How many outfits can she make assuming each outfit consists of one top, one skirt, and a pair of shoes?

**A) 26 B) 24 C) 15 D) 9 E) NOTA**

19. The number of steps in the tower is the greatest common factor of 78 and 60. How many steps are there?

**A) 6 B) 18 C) 48 D) 138 E) NOTA**

20. Which integer is closest to ?

**A) 6 B) 7 C) 47 D) 48 E) NOTA**

21. Rapunzel counts a prime number of flowers in the garden near her tower. Which of the following could be the number she counted?

**A) 1 B) 227 C) 342 D) 495 E) NOTA**

22. of the tower is covered in vines. What percentage of the tower is not covered, rounded to the whole percent?

**A) 22% B) 23% C) 77% D) 78% E) NOTA**

23. Simplify:

**A) B) C) D) 2 E) NOTA**

24. Rapunzel sees 26 birds outside of her window. Five have both red and grey feathers. Thirteen have at least some red feathers and 7 have only grey feathers. How many birds have no red feathers and no grey feathers?

**A) 1 B) 8 C) 11 D) 13 E) NOTA**

25. Rapunzel is said to be so beautiful that whenever a prince sees her, there is a 75% chance he will ask her to marry him. Which ways can 75% be written?

i)

ii) 75

iii) 7.5

iv)

**A) i B) i, iii C) i, iv D) i, ii, iii E) NOTA**

26. Rapunzel's birthday is on March 9. The Prince's birthday is on June 27. If the Prince was born the year before Rapunzel was born, how many whole days older is the Prince? (Assume they were both born at exactly noon and Rapunzel was not born on leap year.)

**A) 253 B) 254 C) 255 D) 256 E) NOTA**

27. The bottom of a ladder is placed on the ground at (3, 2) and touches the tower at (1, 9). What is the slope of the ladder? Hint: this ladder isn't tall enough to free Rapunzel.

**A) B) C) D) E) NOTA**

28. Starting at the base of Rapunzel's 66 foot tower, the Prince begins to climb with his bare hands. Since this is a fairly difficult task, after climbing 7 feet, he would slip down 2 feet. How many times does the Prince have to climb upwards?

**A) 12 B) 13 C) 14 D) 15 E) NOTA**

29. HURRY! FIND THE NEXT NUMBER IN THIS SEQUENCE TO HELP THE PRINCE SAVE RAPUNZEL:

1, 1, 2, 3, 5, 8, ?

**A) 31 B) 13 C) 11 D) THERE IS NO PATTERN E) NOTA**

30. The Prince and Rapunzel finally found each other and they lived happily ever \_\_\_\_\_!!!!

**A) no B) refta C) forever D) after E) NOTA**