**ANSWERS**

1. **A**
2. **C**
3. **C**
4. **D**
5. **B**
6. **C**
7. **B**
8. **C**
9. **E (1275)**
10. **A**
11. **B**
12. **A**
13. **B**
14. **B**
15. **D**
16. **D**
17. **C**
18. **D**
19. **C**
20. **B**
21. **D**
22. **C**
23. **A**
24. **A**
25. **D**
26. **B**
27. **A**
28. **B**
29. **E**
30. **B**

**SOLUTIONS**

1. If 60% of the mice are blonde, then 40% are brown. (100 – 60= 40) 40% of 50= .40×50=20 **(A)**

2. The primes numbers are 2, 3, 5, 7, 11, 13, 17…, the 7th of which is 17. (For reference, prime numbers are numbers with no factors other than the number itself and 1.) **(C)**

3. The least common multiple of 3 and 4 is 12. There is no smaller number that they are both divisible into. (Note: The least common multiple of 2 and 6 is 6, because 6 can divide into 6.) **(C)**

4. You have 4 options for the first letter: L, O, V, or E. Since you have used up one letter, you then have three options for the second letter. You have 2 options for the third letter, and one option for the fourth letter. You multiply those options together to get the total number of possible arrangements. 4×3×2×1=24 **(D)**

5. (2(4×3) – 5×4)3-2

(2(12) – 20)3-2

(24 – 20)3 – 2

(4)3 – 2

12 – 2

10 **(B)**

6. 20 homes/4 homes= 5

5×1.5=7.5 **(C)**

7. 5.2 is equivalent to 5 and . 5 is equivalent to . + = **(B)**

8. Volume of a rectangular prism= length×width×height=7×4×3=84 **(C)**

9. By adding the first and last numbers together, working your way inward (1+50, 2+49, 3+48…), you will get 25 51s. 25×51=1275 **(E)**

10. In order to determine whether a number is divisible by 3, you add all of the digits together and see if they are divisible by 3. In order to determine whether a number is divisible by 4, you see if the last two digits are divisible by 4. 127584 ends in 84, which is divisible by 4 (84/4=21). 1+2+7+5+8+4=27. 27 is divisible by 3 (27/3=9). **(A)**

11. There are a total of 13 letters. P, S, N, D, P, P, L, and E are all consonants, which makes a total of 7 consonants. The probability you choose one of these letters is 7 out of 13 or 7/13. **(B)**

12. There are normally seven (7) dwarves. Subtract those that are out hunting (-3), our mining (-2), and out at a friend’s (-1). 7 - 3 - 2 - 1 = 1, so the answer is that there is one dwarf available to help Snow White. **(A)**

13. Each of the dwarves takes 15 minutes to get bathed. 15 minutes is one fourth of an hour, or .25 hours. .25 times the seven (7) dwarves is 1.75 hours total. **(B)**

14. Grumpy eats 1/2 of the cake. Sleepy eats 1/2 of 1/2, or 1/2 x 1/2, or 1/4 of the cake. Happy eats 1/3 of 1/2 of 1/2 of the cake, or 1/3 x 1/2 x 1/2, or 1/12 of the cake. 1/2 + 1/4 + 1/12 = 10/12 or 5/6. This is the amount of cake that is eaten. Therefore, only 1/6 remains for the other dwarves. **(B)**

15. Since Snow White is five (5) times as fair as her sister, and her sister is thirteen (13) times as fair as the Evil Queen, you must multiply five and thirteen (5 x 13) to find how many times fairer that the Evil Queen Snow White is. Since five times thirteen is sixty five (65), Snow White is sixty five times as fair as the Evil Queen. **(D)**

16. The perimeter of a shape is the distance around it. 3.5 + 3.5 + 3 + 3 + 5 + 5 + 4 = 27 inches. **(D)**

17. 3/4ths of the crown remains after the initial 1/4th is made. 3/4 = 3 x 1/4, therefore, the cost will be three times the cost of making 1/4th of her crown. 3 x 300 = 900 dollars. **(C)**

18. 74% is the same as 74/100. Both 74 and 100 are divisible by two, so the fraction in lowest terms is 37/50. **(D)**

19. 23 + 57 + 12 + (28 x 0) = 23 + 57 + 12 + 0, according to the order of operations. Then, 23 + 57 + 12 = 92. **(C)**

20. This is the Fibonacci sequence! **(B)**

21. In one week there are five (5) weekdays (Monday, Tuesday, Wednesday, Thursday, and Friday) and two (2) days in the weekend (Saturday and Sunday). Therefore, in two weeks, there are ten (10) weekdays and four (4) days of the weekend. Every weekday the Beast sheds two pounds of hair, meaning in the two weeks he will shed two pounds of hair times ten, or twenty (20) pounds, on weekdays. Similarly, he will shed three pounds of hair times four, or twelve (12) pounds on weekends. Summing together these amounts, the Beast will shed twelve (12) plus (+) twenty (20) pounds of hair in two weeks, making a total of 32 pounds of hair. **(D)**

22. Belle can make a total of twelve (12) times five (5) times nine (9) outfits, which equals 540 outfits. **(C)**

23. Since Belle starts by saying “he loves me not”, petals one, three, five, and etc (all the odd numbered petals) will be “he loves me not”. Consequently, all of the even numbered petals will be “he loves me”. Thirty four is even and therefore Belle will say “he loves me”. **(A)**

24. A circle will always have the greatest area among the listed shapes (if the length of the perimeter is constant, which it must be since there are 50 yards of fencing). You can also calculate this by finding the area of each shape. Formulas: square: s^2, circle: r^2pi, rectangle: lw, triangle: .5\*bh. **(A)**

25. The Beast’s odds are the ratio of his chances of undoing the curse to being unable to undo the curse. 3% probability means that he will be able to undo the curse 3 times in every 100 trials, which makes 97 failures. Therefore, his odds are 3:97. **(D)**

26. In order to put a number in scientific notation, you have to write it as a power of 10 multiplied by a number less than 10. In this problem, in order to get a number less than 10, you have to move the decimal place to the left 9 places, so that the only digit in front of the decimal place is 2. That leaves you with 2.35 multiplied by the 10 to a power equivalent to the number of places you moved the decimal, which was 9. **(B)**

27. of 24 is 12. of 12 is 9. 12 – 9 = 3 **(A)**

28. The Beast is 6 feet and 2 inches tall. There are 12 inches in a foot (and 12×6=72), so his total height is 72 inches + 2 inches= 74 inches. Belle is 5 feet and 4 inches tall. 5 feet are equivalent to 60 inches, so her height is 60 inches + 4 inches= 64 inches. 74 inches – 64 inches=10 inches. **(B)**

29. The only letters which look the same when reflected (flipped) over a vertical axis and a horizontal axis are O and I. **(E)**

30. Speed=Distance/Time. 255 miles/15 hours=17 mph. 234 miles/13 hours=18 mph. 18>17, so Snow White traveled at a faster speed. **(B)**