**Answers:**

1. **C**

2. **C**

3. **A**

4. **B**

5. **A**

6. **B**

7.  **C**

8.  **C**

9.  **D**

10.  **E (22)**

11.  **A**

12.  **C**

13.  **C**

14.  **D**

15.  **C**

16.  **C**

17.  **E (8/45)**

18.  **D**

19.  **A**

20.  **C**

21.  **A**

22.  **C**

23.  **B**

24.  **A**

25.  **C**

26.  **A**

27.  **A**

28.  **D**

29.  **B**

30.  **B**

**Solutions**

1.  239,000 can we written as 2.39 x 105. **C**

2. If 60 seconds are in one minute and 60 minutes are in an hour, then it takes (60)(60)(5) seconds, which is 18,000 seconds. **C**

3. The fourth prime digit is 7, so the fourth digit of the passcode is 7. If  the second digit is 0 and is 1 less than the third digit, then the third digit is 0+1, which is 1. The first digit is twice the third, so it would be 2\*1,which is 2. **A**

4. A cube has six faces, so the answer is **B.**

5.  If there are 24 hours in a day, then there would be 365•24 hours in a year, which is 8760. **A**

6.    i. It is the second smallest prime number

     ii. 3 is not a multiple of 45, but 45 is a multiple of 3

     iii. It is the first odd prime number

**B**

7.  To find the average, add all the numbers and divide the sum by the total amount of numbers. So, we add 35+40+45, which equals 120, and divide it by three. This equals 40. **C**

8.  If you subtract 8 from 64 continuously until you reach 0, you’d have to do it 9 times. This means that on the 9th day, Lillie will observe 0 asteroids. **C**

9. Using the formula to find the area of a triangle, the answer would be 20\*40\*0.5, which is 400. **D**

10. A=A cube has 6 faces

     B=The area of a square is 4\*4=16

      A+B=22

**E**

11.Because 2017\*0\*564=0, the whole expression equals 0. **A**

12. Plugging 5500 into the equation, the answer should be (9\*5500/5)+32, which is 9932. **C**

13. Since 25% is ¼,  128\*¼ is 32. **C**

14. To find all the possible combinations, multiply 126, which equal 72. **D**

15.  Each term is the square of the term number. Since the question is asking for the 9th term, 9 x 9=81.  **C**

16. If the pattern continues, on February 20th it will be a full moon. **C**

17. There are 45 spacious rocks, so the probability of drawing a gigantic moon rock would be       8/45. **E**

18.  The pattern repeats every 11 letters, so if you divide 2017 by 11, the remainder is 4. That means that the fourth letter in the pattern, C, is the 2017th letter in the infinite pattern. **D**

19. Going up ten units means Jessica is at (5,15), and going left 3 units she will be at (2,15), and going down 5 units she will be at (2, 10). **B**

20. To calculate the distance Jessica traveled, use the formula Distance= Speed\*Time. So the answer would be 1508=1200. **C**

21.  The United States of America (USA) is the only country that has sent people to the moon. **A**

22. To find the total possible ways SPACE can be arranged, it would be 5\*4\*3\*2\*1, which is 120. **C**

23. Because Katharine’s weight on the Moon is *⅙* of her weight on Earth she would weigh 27 pounds. 27 pounds is equivalent to 27\*16 ounces, which is 432. **B**

24.  The each term in the sequence is a regular shape that has 1more side than the previous one. So, the next shape would be a hexagon. **A**

25. After shortening her width, it would be 2 - ½, which is 1.5, and after increasing her length, it would be 2 + 1.5, which is 3.5.Multiplying 1.5\*3.5 equals 5.25. **C**

26.  **A**

27.Using the formula to find the area of a Moon the answer would be \*1000\*1000=1000000.**A**

28. The area of a circle is A = πr2 where r is the radius of the circle. By plugging in the numbers given: 400,000 x 400,000 x π = 160,000,000,000π square miles.

We also have to subtract the area of Moon because the question is asking for the area of the visible part of the Sun. So, we have to subtract 1,000,000 from 160,000,000,000 to get 159,999,000,000. **D**

29. 20 million x 7 = 140 million miles. **B**

30. 2 x 2 x 2 x 3 x 3 = 72. **B**