**1. B**

**2. A**

**3. D**

**4. A**

**5. D**

**6. A**

**7. C**

**8. D**

**9. D**

**10. E, Thursday**

**11. E**

**12. A**

**13. B**

**14. C**

**15. C**

**16. C**

**17. B**

**18. B**

**19. A**

**20. B**

**21. B**

**22. B**

**23. D**

**24. E, 6**

**25. C**

**26. C**

**27. B**

**28. B**

**29. B**

**30. D**

1. B, Probability is good outcomes over all possible outcomes and odds are successes to failures. 3 is the number of good outcomes and all is 100, so bad is all-good, or 97.

2. A, The area of the triangle is , or 40 ft2. The area of the square is (15ft)2, or 225ft2. The sum is 265ft2.

3. D, 3 rampion=5 daffodils and 2 daffodils=7 cauliflower

6 rampion=10 daffodils and 10 daffodils=35 cauliflower

6 rampion=35 cauliflower

18 rampion=105 cauliflower

4. A, If she earns 2 dollars on the first day, we'll need to square that 4 times to get the amount on the fifth day. This is written as 216 since the exponent is 2×2×2×2. This equals 65,536 cups.

5. D, start at 8:30, climb up 8:37, climb down 8:39, in the garden 9:01, climb up 9:08, climb down 9:10

6. A, On the 16ft sides there will be 7 posts in between the corner posts. There will be 9 posts on each 20ft side. 4 corners+18+14= 36 posts.

7. C, Each term is the term number cubed. The sixth term would be 63, which is 216.

8. D, If Mother Gothel looks 7 years older, she will actually be 14 years older. 2015+14=2029.

9. D, -3x-2≥7, -3x≥9, x≤-3

10. E Thursday, Rapunzel's hair has to grow 8 feet, which will take 16 days at a rate of 6in per day. Counting forward from Tuesday, 16 days would land on Thursday.

11. E, All of the answer choices are irrational.

12. A, The formula for the volume of a cylinder is r2hπ. (9ft)2×50ft×π=4,050πft3

13.B, Scientific notation is written as a number between 1 and 10 multiplied by 10 to the correct power. 2.015×10-8

14. C, time=distance÷speed, time=77ft÷(7ft÷2min), time= 22min

15. C, If the size of the plant doubles every hour, it will be half full one hour before 10 an one quarter full two hours before 10, at 8 hours.

16. C, , , *x*=40, Rapunzel has 100 pencils and 40 pens, so the total is 140 utensils.

17. B, 3y=-x+1

+(-y=x+3)

2y=4

y=2, x=-5, -5+2= -3

18. B, Multiply 3×4×2 to get the number of possible combinations.

19. A, When you factor 60 and 78, you get 223151 and 2131131, respectively. They have 2131 in common. Multiplying this out gives 6.

20. B, is about 6.92, which is closest to 7.

21. B, 227 is the only prime number listed.

22.B, of the tower is not covered in vines. When you divide 5 by 22, it's about .2272. This converted to a percent is 22.72%. Round to the nearest whole percent to get 23%.

23. D, = = = = 2

24. E,

There are 6 birds with no red and no grey feathers.

grey

26

7

red

8

5

6

25. C, i. percent means out of 100, iv. 9 divided by 12= .75 or 75%

26. C,

|  |  |
| --- | --- |
| month | Number of days |
| June | 3 |
| July | 31 |
| August | 31 |
| September | 30 |
| October | 31 |
| November | 30 |
| December | 31 |
| January | 31 |
| February | 28 |
| March | 9 |

Total number of days is 255.

27. B, The formula for slope is . Plug in the cooridnates .

28. B, The process of climbing 7ft and sliding down 2ft means he travels 5ft total each time. After repeating the process 12 times, the prince is 60ft up the tower. He just needs to go up once more, resulting in 13 times.

29. B, This is a Fibonacci sequence where the next number is the sum of the previous two. So, the sum of 5 and 8 is 13.

30. D, Every fairy tale has a happy ending.