1. Order of operations gives 9612|6-8|

9612(2)

8(2)

**C 16**

1. There are 560= 300 seconds in 5 minutes. Since distance = rate time we find that

300 2 = **600 m D**

1. Sum of Justin’s individual scores is 7X3=21

So Jaewon’s individual scores must be greater than 21 which yields the following inequality

X+4+9>21

X+13>21

X>8

The smallest whole number that fits this solution is **9 D**

1. Plugging in 2 for x in the equation yields:

y=9-(2)2

y=9-4

x=5

The problem also defined all units to be in feet so the diver was **5** feet above the water giving the answer as **C.**

1. Solving yields: (12-26)x-13=8x

-14x-13=8x

-13=22x

**x = - B**

1. The word diving has 4 letters so there are 4! distinct ways to arrange them. **24 C**
2. A geometric sequence has a common ratio, r, between each of the terms. Subtracting any two consecutive terms will yield r to be 8. For her next time you add 8 to 44 giving **52 B (**The current world record is 52.06 seconds)
3. The volume of a cube can be found using the formula V = e3. So, V = 503 = 125,000 cubic meter. **D**
4. The rectangle dimensions with the largest area is a square, so dividing the perimeter by four (each of a square's four sides is equal) gives that each side is 100 ft. Multiplying 100 by 100 gives us the area of the square, or **10000 feet squared** **B**
5. The volume of each cup can be found by using the formula A=r2h. Using this, we find the Cup 1 has a volume of 36, Cup 2 has a volume of 16, and Cup 1 has a volume of 32 (all in in3), which means our answer is **Cup 1 A**
6. Factoring 156 yields that the largest factor that we cannot break down into smaller ones is 13, which is also prime, making our answer **13 E**
7. Setting 200 as D for both equations gives us:

200=8t (Alberic)

200=6t+5 (Chamara)

Solving these for t yields that Alberic will finish first with a time of 25 seconds **A**

1. Since the y axis gives the height above water, we want to find when y=0, or the x-intercept, to find each divers’ distance from the board when they hit the water. Setting y=0 in each equation yields:

0= -+3 (Alberic) 0= -+3 (Chamara)

x=27 units x= 54 units

Therefore, Chamara enters the water 54 units away from the board while Alberic enters the water 27 units away from the board. **D**

1. 8/15 is roughly equal to .5333, which, when converted to a percent (53.33%) is closest to **55% D**
2. Since the sum of the fractions that Jack spends his time must add up to 1 we can make a simple equation:

x++ = 1

**x = D**

1. Plugging the numbers in , we get 3 $ 7 = 3+3(3/7+1). Simplifying gives us 3+30/7, which simplifies to **51/7 B**
2. We can change the denominators of each fraction to 60, allowing us to compare the numerator to find which is the least. Out of all of the athletes, Justin has left the least amount of energy drink in his bottle **34/60 D**
3. Since the ratios must be the same we can set up a simple equation:

=

5x= 660000

**x= 13200 gal A**

1. Since 80% of the solution is chlorine we can multiply .8(175) to find that 140 gallons of chlorine are present **C**
2. Plugging in each of the points shows us that only (-5,-23) is valid for the equation. **A**
3. In two years, Jason will be 20 and also double his sister's age at that time, making his sister's age (in two years) 10. That means she is 8 years old as of now. Jason's brother is 4+1/2(Jason's age)+(Jason's sister's age) = 4+18/2+8=**21 D**
4. We can create two equations and solve a system of equations to get our answer here.

We first create our two variables: the chickens and the cows ( C and W, respectively)

Using the given information:

C + W = 20

2C + 4W = 62

Solving this yields that the number of chickens C is **9 B**

1. All the percentages should add up to 100%. The trees beside the pink trees total up to 62%, meaning 38% of the trees are pink. Multiplying this by 300 gives us **114 C**
2. The sum of the numbers is (number of lanes)/2\*(sum of first and last lane) = (30/2)\*31 = **465 C**
3. Using the given height of the pool (10), we can quickly see that the width is 2\*10 = 20 and the length is 3\*20+1 = 61, which we can multiply together **12200 D**
4. Listing the primes from 1 to 100 yields 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, and 97. This is 25 prime numbers **C.**
5. Solving each equation for y and comparing the slopes shows that I, III both have a slope of . **A**
6. The sum total of degrees in a triangle is always 180, so 180-36-72 = **72 B**
7. The sum of the days it takes to prepare the meeting is 24.25 days. Counting backwards gives us that Rohit should start on **January 23 C**
8. Factoring out 2163 gives us 3, 7, and 103 as our factors, all of which are prime **3, 7, 103 E**