1. **D** 2 x 31= 62
2. **B**  220 lbs 2.2 lbs = 100 lbs = 100,000 g
3. **C** Vowels are i, a, o, o. Total number of letters in sentence is 8. 4/8 is 50%.
4. **B** 3+4+4+4=15 15/4=3.75
5. **B** Radius = 4/2 = 2, 2πr = 2(2)𝜋 = 4π
6. **C** Least common multiple of the denominator is 60. Multiply denominator of each fraction by a factor that will turn it into 60, then multiply that same factor by the numerator (For ex. x = ). Once all fractions have the same denominator, simply add to find the sum.
7. **A** 11 is the smallest two-digit prime number.
8. **C** The sum of the first five even numbers is 20: 0+2+4+6+8= 20. The sum of the first five odd numbers is 25: 1+3+5+7+9= 25. Therefore Matt ate the most apples, 5 more than Brandon did.
9. **A**  4(10+6)-23+6/3=

4(16)-8+2=58

1. **C** Brandon starts out with 12 goobles, and for every 2 goobles he can get 3 gabbles. Therefore, he can get 12/2\*3=18 gabbles. Then, for every 6 gabbles, he can get 12 gubbles, for a total of 18/6\*12=36 gubbles. Every 3 of these gubbles gets Brandon 5 apples, for a total of 36/3\*5=60 apples, C.
2. **C** The formula for the area of a rectangle is the length multiplied by the width. Simply multiplying the dimensions provided in the answer choices will give you the area. Answers B and D have an area of 24 in^2. Answer A has an area of 25 in^2. Answer C has the largest area of 26 in^2.
3. **E** The perimeter of a rectangle is the sum of all the sides of the rectangle. If the length is 6 inches and the width of the rectangle is 3 inches then the perimeter of the rectangle is 3+6+3+6=18.
4. **A** The formula for the volume of a box is the length multiplied by the width multiplied by the height. The 1 in. by 1 in. cut into the corner of the cardboard forms the height of the box and shortens the length and width by 2 in. Multiplying the new dimensions of the box (1 in. x 3 in. x 6 in.) results in a volume of 18 in^3.
5. **C** There is 1 black shirt out of 5 shirts. The probability is .
6. **C** In an equilateral triangle, all three sides are the same length and all internal angles are the same (60°)
7. **C** 5 feet = 60 in = 152.40cm
8. **C** There are 15 prime numbers under 50.
9. **C** The area of a triangle is the base times the height divided by 2. 6 x 5 2 = 15 ft^2. Convert to inches: 15 x 144 = 2160 in^2
10. **A** 1,320,132,000 6 = 220,022,000
11. **B** 1,320,132,000 4 = 330,033,000
12. **C** Order of operations leads to an answer of 9.
13. **D** If the area covered by the apples doubles every day, and it takes 24 days for the whole planet to be covered, that means half of the area was still uncovered a day earlier, meaning that it took 23 days for half of the planet to be covered by apples.
14. **C** If Leon climbs 5 ft during the day but falls 4 ft at night, he moves 1 ft per full day. By the end of the 19th day, Leon will be 20 ft away from the pipe. On the 20th day, he will be able to climb the last 5 ft and reach the end of the pipe.
15. **A**  The price of the pepper spray is x. The taser costs $100 + x. The sum of the two products costs $110. Write an equation: x + (100 + x) = 110. Solve for x.
16. **D** The 13th every other even whole number is 48.
17. **B** Order of operations. Operations in parentheses should be done first, but notice that everything in the parentheses will be multiplied by 0 regardless of the answer. The remaining expression becomes 323 + 0 which equals 323.
18. **A** The 10th Fibonacci number is 55.
19. **A** Scientific notation requires for there to be a decimal after the first nonzero integer then multiplied by where n is the number of places until the ones digit.
20. **C** Logic. Applying all the rules, there are two possible ways the galaxies can be lined up: Whirlpool, the Black Eye, Milky Way, Andromeda, Bode’s Galaxy or vice-versa. Regardless, the Milky Way is always the third galaxy.
21. **B** Trivia fact. Harrison Ford – Han Solo, Peter Mayhew – Chewbacca, David Prowse – Darth Vader