1. A has the largest mean because its center is farther on the x axis. B has the largest standard deviation and variance because it has the largest spread. Answer = (A,B)
2. There are 30 values in the distribution, so the lower quartile can be found by looking for the middle value of the first 15 numbers (18). The upper quartile can be found by looking for the middle number of the largest 15 numbers in the distribution (31). The Interquartile Range can be found by finding the difference: Q3-Q1. Answer = 13
3. This graph is right skewed because the frequencies are much largest in the smaller values, and much lower in the larger values of the distribution. Answer = 2
4. The domain of the uniform distribution can help you find the range of the values to be 78. Since the distribution is uniform, the height of the rectangular distribution is 1/78. That makes the probability of lying between 465 and 485 equal to the area of that region: (20)(1/78) = 20/78 = 10/39 Answer = 10/39
5. Finland does not show any "white space" in the diagram, meaning it has the smallest percentage of "other staff". The permutations of the letters in the word Finland can be found by: 7!/2! (accounting for the n repeating in the word). Answer = 2520
6. Correct values: 2+3+6=Answer =11
7. Since the order matters if you get 1st or 3rd place, etc., we use a permutation: 6P3= Answer = 120
8. There are 3 face cards in every suit of every deck: {Jack, Queen, King}. That means the probability is 1/3 of selecting a Queen. Answer = 1/3
9. $$\mu_x = x_1 p_1 + x_2 p_2 + \cdots + x_k p_k$$
   $$= \sum x_i p_i$$
   (10)(0.2)+(11)(0.5)+(12)(0.2)+(13)(0.1)=
   Answer =11.2
10. Low bias because the penguin is right on target and low variability because he is so consistent. Answer = B
11. According to the empirical rule, the 84th percentile lies 1 standard deviation above the mean. This makes the answer 3.5 + 0.5 = Answer = 4
12. A residual is the observed value – expected value. For 2017, the observed value can be found in the table (9). For the expected, we will use the calculated least-squares regression line and substitute 2017 in for x. This gives a y hat value of 8.5. Answer = 0.5
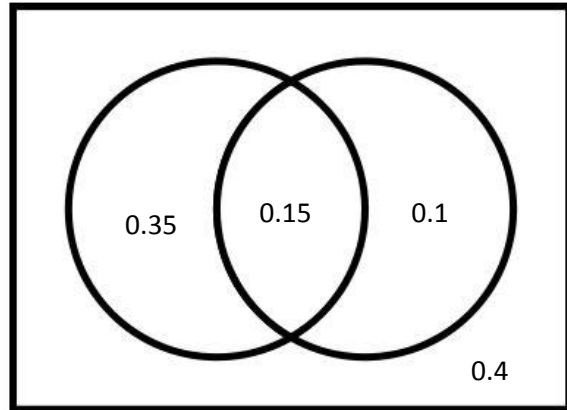
13. Answer = Systematic
14. $p(a) + p(b) -$
    $p(a \text{ and } b) = p(a \text{ or } b)$
    Using the Venn
    Diagram to the right:
    Answer = 0.15   #14
15. IQR = 210;
    1.5IQR=315, the only
    value larger than
    Q3+1.5IQR is 2017.

Answer = 2017

16. Answer = 170

17. $C(5,1) \left(\frac{1}{5}\right)^1 \left(\frac{4}{5}\right)^4 =$
    $Answer = \frac{256}{625}$
18. Independent Variables
    Answer = N
19. The middle 68%
    according to the Empirical Rule is $\pm\sigma$; Answer = 72
20. $r^2 = 0.84 \; ; r = \; \pm \frac{\sqrt{84}}{10} = \pm \frac{2\sqrt{21}}{10} = \pm \frac{\sqrt{21}}{5} ; least = Answer = \; -\frac{\sqrt{21}}{5}$
21. Age, height, Weight, and Length are all continuous variables because you
    measure them. Answer = 4
22. The degrees of freedom for a 2 way chi-square table can be found with (r-
    1)(c-1) = (4-1)(2-1) = Answer = 3
23. There are 9 numbers, 9 is the fifth value in the set when placed in ascending
    order. Answer = 9
24. Expected value = 1 / p = 1 / (1/6) = Answer = 6
25. The probability can be found by calculating the complement to neither
    surviving the 25 years: 1 – (0.6)(0.7) = Answer = 0.58

0.35   0.15   0.1

0.4

#16

C 82

6

A 42

4

8

18

G 10