Table Data Answer Key

1. **C** is the correct answer. Total number of shows with 5 or more seasons = 6. Number of shows from the years between 1995 and 2005 with 5 or more seasons = 2. $\frac{2}{6}=\frac{1}{3}=33\%$. Choice A is incorrect and is the total number of shows in the time period 1995 and 2005. Choice B is incorrect and may result from $\frac{2}{8}=25\%$ which uses an incorrect denominator of the total number of shows in 1995 and 2005 rather than the total number of shows with 5 or more seasons. Choice D is incorrect and may result from using an incorrect time period.

2. **B** is the correct answer. We know that if 25% of those who prefer vanilla are in the 8th grade, then we can translate this to an equation, where x is the total number of students:

$$.25(x)=35$$
$$x=140$$

Now, we subtract 35 from 140 to get the number of seventh grades who like vanilla: $140-35=105$. Now, we fill in 105 and see that we add it to the number we really want, the number of 7th graders who like chocolate best, to get 150 total. $150-105=45$ 7th graders who like chocolate. Alternatively, we can set up a proportion, knowing that if ¼ or 25% of the students are 8th graders then 75% or ¾ of the students are 7th graders. From these fractions, we know the ratio of 7th graders to 8th graders is 3:1, because 3 parts are seventh grades of the whole and one part is 8th graders.

$$\frac{3}{1}=\frac{x\ students}{35 students}$$

There are 105 students in the 7th grade who prefer vanilla. Since the total number of 7th graders is 150, to find how many 7th graders prefer chocolate, simply subtract 105 from 150 to get 45. There are 45 7th graders who prefer chocolate. Choice B is incorrect and is the total number of students in the 7th grade who prefer vanilla.

3. **A** is the correct answer. Check each option to the numbers in the table. Option B is comparing the relative frequency of all examples and demonstrations in lesson 2 to all the examples and demonstrations in the entire video. Option C is the relative frequency that a problem in lesson 1 is a demonstration. Option D is the relative frequency that a problem in lesson 3 is a demonstration. Only Option A is true, as it is comparing the number of demonstration problems in lesson 4 (3) to the number of total demonstration problems in the entire video (21). Thus, the frequency is $\frac{3}{21}=\frac{1}{7}$. Choices B, C, and D are all incorrect as none of them give a true statement from the information in the table provided.

4. **B**. Jamie arrived on time with Taxi Service C 1 time. She used Taxi Service C a total of 5 times. The probability that Jamie was late given that she used Taxi Service C is $\frac{1}{5}=0.2$. Choices A, C, and D are all incorrect and may result from using the wrong values in the table.

5. **C**. For two events to be independent of one another, the probability of one happening cannot affect the probability of the other event happening. In this case, that means a student has the same probability being enrolled in a real analysis course regardless of gender. 155 out of a total of 293 students are male, that is $\frac{155}{293}\approx 0.53$. This means that a randomly selected student who is enrolled in Real Analysis should have a 53% chance of being male. Since there are 107 students enrolled in Real Analysis, and out of those 107 students we expect 57% of them to be male, in total we expect $107*0.53\approx 57$ students. This corresponds to answer choice C.

6. **B**. Add up the total price of all 8 cakes and divide by number of cakes:

$$\frac{(5)(25)+(2)(35)+(1)(40)}{8}=29.375$$

After rounding to the nearest hundredth, the average cake price is $29.38. Choices A, C, and D are all incorrect because they are not the average cake price and may result from algebra errors. Also note that the question states diameters, not radii, so you must divide the diameters by two to find the appropriate price for each cake.

7. **C**. Add up all the ages and divide by number of presidents:

$$\frac{46+60+61+63+56+77+68+54+62+55}{10}=60.2$$

The mean age of these presidents at the end of their terms is 60.2 years old. Choice A is incorrect and is smaller than the true mean. Choice B is incorrect and represents the median of the data set. Choice D is incorrect and represents the largest value in the data set.

8. **D**. Given that the total of "3" is 20, we can find B given 3, which is equal to $20-8=12$. We know that the total of "B" is 56, so we can find B given 1, which is equal to $56-(12+28)=16$. We also know the total of "1" is 44, so we can find x : $x+16=44$. $x=44-16=28$. Therefore, the value of x must be 28. Choice A is incorrect and is the intersection of B and 3. Choice B is incorrect and is the intersection of B and 1. Choice C is incorrect and is smaller than what the value of x must be.

9. **A**. The number of dogs in shelter A is 14 dogs. To find the median number of dogs in all 5 shelters, first organize the numbers in a list in numerical order: 3, 8, 14, 17, 22. It is now clear to see the median number of dogs in all five shelters to be 14 dogs. The difference between these two numbers is $14-14=0$. Choices B, C, and D are all incorrect because none of them represent the difference between the number of dogs in shelter A and the median number of dogs in all 5 shelters. Choice C is the median number of dogs in all 5 shelters, and the number of dogs in shelter A. The question is asking for the difference between the two.

10. **C**. On Week 1, Max spent a total of 26 hours on his phone. On Sunday, he spent a total of 14 hours on his phone. 26-14 = 12 hours. Choices A is incorrect because it is the total number of hours Max spent on his phone. Choice B is incorrect and may result from careless algebra. Choice D is incorrect and is much too small to be the difference.