Answers

1. The number of integers between 51 and 107, inclusive, is (107 - 51) + 1 = 57.

The correct answer is D.

2. One way to attack a problem like this is to write out each decimal completely, as follows:

(A) .000008 [5 zeroes after the decimal point, followed by an 8]

(B) 8×10^{-8} = .00000008 [7 zeroes after the decimal point, followed by an 8]

(C) $8 \div 10^5$ = .00008 [4 zeroes after the decimal point, followed by an 8]

(D) $\dfrac{.0008}{1000}$ = .0000008 [6 zeroes after the decimal point, followed by an 8]

(E) $88 \div 10^6$ = .000088 [4 zeroes after the decimal point, followed by 88]

The greatest number is .000088 (E), while the second greatest number is .00008 (C).

Since the question asks for the second greatest number, the correct answer is C.

3. The bus will carry its greatest passenger load when P is at its maximum value. If $P = -2(S - 4)^2 + 32$, the maximum value of P is 32 because $(S - 4)^2$ will never be negative, so the expression $-2(S - 4)^2$ will never be positive. The maximum value for P will occur when $-2(S - 4)^2 = 0$, i.e. when $S = 4$.

The question asks for the number of passengers two stops after the bus reaches its greatest passenger load, i.e. after 6 stops (S = 6).
$P = -2(6 - 4)^2 + 32$
$P = -2(2)^2 + 32$
$P = -8 + 32$
$P = 24$

The correct answer is C.

4. For an overlapping set problem we can use a double-set matrix to organize our information and solve. We are told in the question stem that 180 guests have a house in the Hamptons and a house in Palm Beach. We can insert this into our matrix as follows:

	House in Hamptons	No House in Hamptons	TOTALS
House in Palm Beach	180		
No House in Palm Beach			
TOTALS			*T*

The question is asking us for the ratio of the darkly shaded box to the lightly shaded box.

(1) INSUFFICIENT: Since one-half of all the guests had a house in Palm Beach, we can fill in the matrix as follows:

	House in Hamptons	No House in Hamptons	TOTALS
House in Palm Beach	180	$(1/2)T - 180$	$(1/2)T$
No House in Palm Beach			
TOTALS			*T*

We cannot find the ratio of the dark box to the light box from this information alone.

(2) INSUFFICIENT: Statement 2 tells us that two-thirds of all the guests had a house in the Hamptons. We can insert this into our matrix as follows:

	House in Hamptons	No House in Hamptons	TOTALS
House in Palm Beach	180		
No House in Palm Beach	(2/3)*T* – 180		
TOTALS	(2/3)*T*		*T*

We cannot find the ratio of the dark box to the light box from this information alone.

(1) AND (2) INSUFFICIENT: we can fill in our matrix as follows.

	House in Hamptons	No House in Hamptons	TOTALS
House in Palm Beach	180	(1/2)*T* – 180	(1/2)*T*
No House in Palm Beach	(2/3)*T* – 180	**180 – (1/6)*T***	**(1/2)*T***
TOTALS	(2/3)*T*	**(1/3)*T***	*T*

The ratio of the number of people who had a house in Palm Beach but not in the Hamptons to the number of people who had a house in the Hamptons but not in Palm Beach (i.e. dark to light) will be:

$$\frac{(1/2)T - 180}{(2/3)T - 180}$$

This ratio doesn't have a constant value; it depends on the value of *T*. We can try to solve for *T* by filling out the rest of the values in the matrix (see the **bold** entries above); however, any equation that we would build using these values reduces to a redundant

statement of $T = T$. This means there isn't enough unique information to solve for T.
The correct answer is (E)

5. When a number is divided by 10, the remainder is simply the units digit of that number. For example, 256 divided by 10 has a remainder of 6. This question asks for the remainder when an integer power of 2 is divided by 10. If we examine the powers of 2 (2, 4, 8, 16, 32, 64, 128, and 256…), we see that the units digit alternates in a consecutive pattern of 2, 4, 8, 6. To answer this question, we need to know which of the four possible units digits we have with 2^p.

(1) INSUFFICIENT: If s is even, we know that the product rst is even and so is p. Knowing that p is even tells us that 2^p will have a units digit of either 4 or 6 ($2^2 = 4$, $2^4 = 16$, and the pattern continues).

(2) SUFFICIENT: If $p = 4t$ and t is an integer, p must be a multiple of 4. Since every fourth integer power of 2 ends in a 6 ($2^4 = 16$, $2^8 = 256$, etc.), we know that the remainder when 2^p is divided by 10 is 6.

The correct answer is B.

6. The equation in the question can be rewritten as: $2^{2x-1} = 2^{3y}$.
We can set the exponents equal: $2x - 1 = 3y$.

We can solve for x in terms of y, $x = \dfrac{3y + 1}{2}$

This question can also be solved as a VIC (Variable In answer Choices) by plugging in a value for y. If $y = 3$, we can rewrite the equation as $2^{2x-1} = 8^3$ or $2^{2x-1} = 2^9$.

We can set the exponents equal: $2x - 1 = 9$ so $x = 5$.

The correct answer is B.

7. With water filling the tank at 22 meters cubed/hour, in one hour, there will be a “cylinder of water” in the tank (smaller than the tank itself) with a volume of 22 m^3. Since the water level rises at 0.7 meters/hour, this “cylinder of water” will have a height of 0.7 meters. The radius of this “cylinder of water” will be the same as the radius of the cylindrical tank.

$Volume_{cylinder} = \pi r^2 h$

$22 = \pi r^2(0.7)$ (use π ˜ 22/7)
22 ˜ $22/7\ (7/10)r^2$
r^2 ˜ 10
r ˜ $\sqrt{10}$

The correct answer is (B)

8. The probability that Memphis does NOT win the competition is equal to 1 – p, where p is the probability that Memphis DOES win the competition.

Statement (1) states that the probability that Memphis (or any of the other cities) does not win the competition is 7/8. This explicitly answers the question so this statement alone is sufficient.

Statement (2) give us 1/8 as the value for p, the probability that Memphis DOES win the competition. We can use this to calculate the probability that Memphis does NOT win the competition: 1 – 1/8 = 7/8. This statement alone is sufficient to answer the question.

The correct answer is D

9. For their quotient to be less than zero, a and b must have opposite signs, i.e. a is positive and b is negative or a is negative and b is positive.

(1) INSUFFICIENT: a^2 is always positive so for the quotient of a^2 and b^3 to be positive, b^3 must be positive. That means that b is positive. This does not however tell us anything about the sign of a.

(2) INSUFFICIENT: b^4 is always positive so for the product of a and b^4 to be negative, a must be negative. This does not however tell us anything about the sign of b.

(1) AND (2) SUFFICIENT: statement 1 tells us that b is positive and statement 2 tells us that a is negative.

The correct answer is C

10. Notice that Paul's income is expressed as a percentage of Rex's and that the other two incomes are expressed as a percent of Paul's. Let's assign a value of \$100 to Rex's income. Paul's income is 40% less than Rex's income, so (0.6)(\$100) = \$60. Quentin's income is 20% less than Paul's income, so (0.8)(\$60) = \$48. Sam's income is 40% less than Paul's income, so (0.6)(\$60) = \$36. If Rex gives 60% of his income, or \$60, to Sam, and 40% of his income, or \$40, to Quentin, then: Sam would have \$36 + \$60 = \$96 and Quentin would have \$48 + \$40 = \$88. Quentin's income would now be \$88/\$96 = 11/12 that of Sam's.

11. We can solve this problem as a VIC (Variable In answer Choice) and plug in values for the variables x and y. Let's say x = 2 and y = 3.

Machine A manufactures a deck of cards in 2 hours

Machine A's rate of work is 1 deck in 2 hours = ½

Machine B manufactures a deck of cards in a ½ hour

Machine A's rate of work is 2 decks in 1 hour = 2

If machine A operates alone for 3 hours (y = 3), it will manufacture 3/2 decks:

$rt = w$

$(1/2)3 = 3/2$ decks

To complete 100 decks, A and B must then work together to manufacture $100 – 3/2 = 197/2$ decks.

Machine A and machine B have a combined rate of $½ + 2 = 5/2$.

Working together, it would take machine A and machine B 197/5 hours to complete the remaining 197/2 decks:

$rt = w$
$(5/2)t = 197/2$
$t = 197/5$

To complete the VIC method of plugging values, we now check each answer choice to see which one gives an equivalent value for the time (197/5) when $x = 2$ and $y = 3$.

Only answer choice B yields $[100(2) – 3]/5 = 197/5$.

The correct answer is B.

12. Since $5a = 3b = 25$, $(5a)(3b) = (25)(25)$ or $15ab = 625$.

If we multiply both sides of this equation by 2, we get $30ab = 1250$.

The correct answer is E.

13. For x^3 to be even, x must be even. We can rephrase the question: "Is x even?"

(1) INSUFFICIENT: Let's break this expression down. Since x is an integer, $2x$ will always be even. When you add an even integer (2) to an even integer ($2x$), the result will always be even. x can be odd or even.

(2) SUFFICIENT: The only way for the sum of two integers to be even is if they are both even or both odd. Since $3x + 1$ is even, $3x$ must be odd (because 1 is odd). If $3x$ is odd, x itself must be odd. This provides an absolute no to the question "Is x even?"

The correct answer is B

14. If we open up the absolute value, we get $x < 1$ or $x > -1$. The question can be rephrased as,
“Is $-1 < x < 1$ (and x not equal to 0)"?

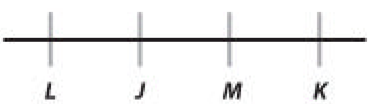
(1) INSUFFICIENT: If $x > 0$, this statement tells us that $x > x/x$ or $x > 1$. If $x < 0$, this
statement tells us that $x > x/-x$ or $x > -1$. This is not enough to tell us if $-1 < x < 1$.

(2) INSUFFICIENT: When $x > 0$, $x > x$ which is not true (so $x < 0$). When $x < 0$, $-x > x$ or
$x < 0$. Statement (2) simply tells us that x is negative. This is not enough to tell us if $-1 < x < 1$.

(1) AND (2) SUFFICIENT: If we know $x < 0$ (statement 2), we know that $x > -1$ (statement 1). This means that $-1 < x < 0$. This means that x is definitely between -1 and 1.

The correct answer is C.

15. It may be easiest to represent the ages of Joan, Kylie, Lillian and Miriam (J, K, L and M) on a number line. If we do so, we will see that the ages represent consecutive integers as shown in the diagram.



Since the ages are consecutive integers, they can all be expressed in terms of L: L, $L + 1$,
$L + 2$, $L + 3$. The sum of the four ages then would be $4L + 6$.

Since L must be an integer (it's Lillian's age), the expression $4L + 6$ describes a number that is two more than a multiple of 4:
$4L + 6 = (4L + 4) + 2$ [4L + 4 describes a multiple of 4]

54 is the only possibility. The correct answer is (D).

16. We need to consider the formula for compound interest for this problem: $F = P(1 + r)^x$, where F is the final value of the investment, P is the principle, r is the interest rate per compounding period as a decimal, and x is the number of compounding periods (NOTE: sometimes the formula is written in terms of the annual interest rate, the number of compounding periods per year and the number of years). Let's start by manipulating the given expression for r:

$$r = 100\left(\sqrt{\frac{v+q}{p}} - 1\right) \rightarrow \frac{r}{100} = \sqrt{\frac{v+q}{p}} - 1 \rightarrow 1 + \frac{r}{100} = \sqrt{\frac{v+q}{p}} \rightarrow$$

$$\left(1 + \frac{r}{100}\right)^2 = \left(\sqrt{\frac{v+q}{p}}\right)^2 \rightarrow \left(1 + \frac{r}{100}\right)^2 = \frac{v+q}{p} \rightarrow p\left(1 + \frac{r}{100}\right)^2 = v + q \rightarrow$$

$$v = p\left(1 + \frac{r}{100}\right)^2 - q$$

Let's compare this simplified equation to the compound interest formula. Notice that r in this simplified equation (and in the question) is not the same as the r in the compound interest formula. In the formula, the r is already expressed as a decimal equivalent of a percent, in the question the interest is r percent. The simplified equation, however, deals with this discrepancy by dividing r by 100.

In our simplified equation, the cost of the bond (p), corresponds to the principle (P) in the formula, and the final bond price (v) corresponds to the final value (F) in the formula. Notice also that the exponent 2 corresponds to the x in the formula, which is the number of compounding periods. By comparing the simplified equation to the compound interest formula then, we see that the equation tells us that the bond was compounded twice (i.e. for two days) at the daily interest rate of p percent, i.e the $p(1+(r/100))^2$ portion of the expression. Then it lost a value of q dollars on the third day, i.e. the "– q" portion of the expression. If the investor bought the bond on Monday, she sold it three days later on Thursday.

The correct answer is B.

17. (1) INSUFFICIENT: Start by listing the cubes of some positive integers: 1, 8, 27, 64, 125. If we set each of these equal to $2x + 2$, we see that we can find more than one value for x which is prime. For example $x = 3$ yields $2x + 2 = 8$ and $x = 31$ yields $2x + 2 = 64$. With at least two possible values for x, the statement is insufficient.

(2) INSUFFICIENT: In a set of consecutive integers, the mean is always equal to the median. When there are an odd number of members in a consecutive set, the mean/median will be a member of the set and thus an integer (e.g. 5,6,7,8,9; mean/median = 7). In contrast when there are an even number of members in the set, the mean/median will NOT be a member of the set and thus NOT an integer (e.g. 5,6,7,8; mean/median = 6.5). Statement (2) tells us that we are dealing with an integer mean so x, the number of members in the set, must be odd. This is not sufficient to give us a specific value for the prime number x.

(1) AND (2) INSUFFICIENT: The two x values that we came up with for statement (1) also satisfy the conditions of statement (2).

The correct answer is E.

18. We can write a formula of this sequence: $S_n = 3S_{n-1}$

(1) SUFFICIENT: If we know the first term $S_1 = 3$, the second term $S_2 = (3)(3) = 9$.
The third term $S_3 = (3)(9) = 27$
The fourth term $S_4 = (3)(27) = 81$

(2) INSUFFICIENT: We can use this information to find the last term and previous terms, however, we don't know how many terms there are between the second to last term and the fourth term.

The correct answer is A

19. To find the average, find the sum of the terms and then divide by the number of terms:

Sum of the Terms: $\frac{1}{8} + \frac{3}{8} + \frac{4}{8} = 1$

Average $= \frac{\text{Sum}}{\text{\# of terms}} = \frac{1}{3}$

The correct answer is C.

20. Shaded area = Area of the hexagon – (area of circle O) – (portion of circles A, B, C, D, E, F that is in the hexagon)

With a perimeter of 36, the hexagon has a side that measures 6. The regular hexagon is comprised of six identical equilateral triangles, each with a side measuring 6. We can find the area of the hexagon by finding the area of the equilateral triangles.

The height of an equilateral triangle splits the triangle into two 30-60-90 triangles (Each 30-60-90 triangle has sides in the ratio of 1: $\sqrt{3}$: 2). Because of this, the area for an equilateral triangle can be expressed in terms of one side. If we call the side of the equilateral triangle, *s*, the height must be $(s\sqrt{3})$ / 2 (using the 30-60-90 relationships).

The area of a triangle = 1/2 × base × height, so the area of an equilateral triangle can be expressed as: 1/2 × s × $(s\sqrt{3})$ / 2 = 1/2 × 6 × $(3\sqrt{3})$ = $9\sqrt{3}$.

Area of hexagon ABCDEF = 6 × $9\sqrt{3}$ = $54\sqrt{3}$.

For circles A, B, C, D, E, and F to have centers on the vertices of the hexagon and to be tangent to one another, the circles must be the same size. Their radii must be equal to half of the side of the hexagon, 3. For circle O to be tangent to the other six circles, it too must have a radius of 3.

Area of circle O = πr^2 = 9π.

To find the portion of circles A, B, C, D, E, and F that is inside the hexagon, we must consider the angles of the regular hexagon. A regular hexagon has external angles of 360/6 = 60°, so it has internal angles of 180 – 60 = 120°. This means that each circle has 120/360 or 1/3 of its area inside the hexagon.

The area of circles A, B, C, D, E, and F inside the hexagon = $1/3(9\pi) \times 6$ circles = 18π.

Thus, the shaded area = $54\sqrt{3} - 9\pi - 18\pi = 54\sqrt{3} - 27\pi$. The correct answer is E.

21. The question can be rephrased:

$$(5^r)(3^{q+1}) = (5^r)(3)(3^q) = 3(5^r)(3^q)$$

The question then is really asking us to find a value of $(5^r)(3^q)$.

(1) SUFFICIENT: This gives us the value of $(5^r)(3^q)$.

(2) INSUFFICIENT: With $r + q = 6$, there are an infinite number of possibilities for the values of r and q. Each set of values would yield a very different value for $(5^r)(3^q)$.

The correct answer is A

22. (1) SUFFICIENT: We can combine the given inequality $r + s > 2t$ with the first statement by adding the two inequalities:

$$\begin{array}{c} r + s > 2t \\ \underline{\quad t > s \quad} \\ r + s + t > 2t + s \\ r > t \end{array}$$

(2) SUFFICIENT: We can combine the given inequality $r + s > 2t$ with the second statement by adding the two inequalities:

$$\begin{array}{c} r + s > 2t \\ \underline{\quad r > s \quad} \\ 2r + s + > 2t + s \end{array}$$

$2r > 2t$
$r > t$

The correct answer is D.

23. In order to get the smallest possible number of teams as winners (of at least one event), we want to have as many teams as possible not win *any* events.

How can we accomplish this? Since there are 20 events, there are going to be 20 events won. We want as few teams as possible to be the winners of those 20 events. To accomplish this, we will make each "winning" team win as many events as possible.

We are told that no team wins more than 3 events. Thus, the maximium number of events that a team wins is 3.

Team	A	B	C	D	E	F	G
# of wins	3	3	3	3	3	3	2

The chart shows that even when we award teams 3 wins each, the final team (G) still wins 2 events. No team ends up without a win. The correct answer is E.

24. Solve this problem one step at a time.

$(1/2)^4 = (1/16)$

Taking 400% of a number is equivalent to multiplying that number by 4. Thus, $4 \times (1/16) = 4/16$, which simplifies to $1/4$.

Converting 1/4 into a decimal yields 0.25. The correct answer is D.

25. If we put the equation $3x + 4y = 8$ in the slope-intercept form ($y = mx + b$), we get:

$$y = -\frac{3}{4}x + 2,$$ which means that m (the slope) $= -\frac{3}{4}$

The slope of a line perpendicular to this line must be $\frac{4}{3}$,

the negative reciprocal of $-\frac{3}{4}$

Among the answer choices, only E gives an equation with a slope of 4/3.

The correct answer is E.

26. (1) INSUFFICIENT: The question asks us to compare $a + b$ and $c + d$. No information is provided about b and d.

(2) INSUFFICIENT: The question asks us to compare $a + b$ and $c + d$. No information is provided about a and c.

(1) AND (2) SUFFICIENT: If we rewrite the second statement as $b > d$, we can add the two inequalities:

$$\begin{array}{rl} & a > c \\ + & b > d \\ \hline & a+b > c+d \end{array}$$

This can only be done when the two inequalities symbols are facing the same direction.

The correct answer is C.

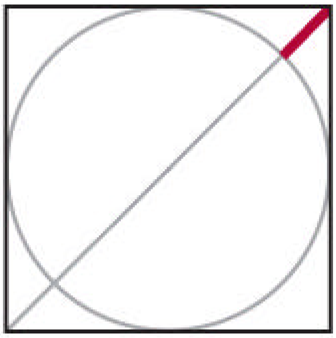
27. Since x and y are integers, the expression $5x$ must be divisible by 5. When you have a number that is divisible by 5 and you add some y to it, the result will be divisible by 5 only if y is divisible by 5 as well. We can rephrase this question: "Is y divisible by 5?"

(1) INSUFFICIENT: this does not tell us if y is divisible by 5.

(2) SUFFICIENT: this tells us that y is divisible by 5.

The correct answer is B.

28. The shortest distance from a vertex of the cube to the sphere would be ½ the length of the diagonal of the cube minus the radius of the sphere. To understand why, think of the parallel situation in two dimensions. In the diagram of the circle inscribed in the square to the right, the shortest possible distance from one of the vertices of the square to the circle would be ½ the diagonal of the square minus the radius of the circle.



The diagonal of a cube of side x is $x\sqrt{3}$. This can be found by applying the Pythagorean Theorem twice (first to find the diagonal of a face of the cube, $x\sqrt{2}$, and then to find the diagonal through the center, $x\sqrt{3}$). Like the sides of the circle in the diagram above, the sides of a sphere inscribed in a cube will touch the sides of the cube. Therefore, a sphere inscribed in a cube will have a radius equal to half the length of the side of that cube.

Diagonal of the cube = $x\sqrt{3}$ = $10\sqrt{3}$
Radius of the sphere = 5
½ diagonal of the cube – radius of the sphere = $5\sqrt{3} - 5 = 5(\sqrt{3} - 1)$

The correct answer is D.

29. It is important to first note that our point of reference in this question is all the possible subcommittees that include Michael. We are asked to find what percent of these subcommittees also include Anthony.

Let's first find out how many possible subcommittees there are that must include Michael. If Michael must be on each of the three person committees that we are considering, we are essentially choosing people to fill the two remaining spots of the committee. Therefore, the number of possible committees can be found by considering the number of different two people groups that can be formed from a pool of 5 candidates (not 6 since Michael was already chosen).

Using the anagram method to solve this combinations question, we assign 5 letters to the various board members in the first row. In the second row, two of the board members get assigned a Y to signify that they were chosen and the remaining 3 get an N, to signify that they were not chosen:

A	B	C	D	E
Y	Y	N	N	N

The number of different combinations of two person committees from a group of 5 board members would be the number of possible anagrams that could be formed from the word YYNNN = 5! / (3!2!) = 10. Therefore there are 10 possible committees that include Michael.

Out of these 10 possible committees, of how many will Anthony also be a member? If we assume that Anthony and Michael must be a member of the three person committee, there is only one remaining place to fill. Since there are four other board members, there are four possible three person committees with both Anthony and Michael. Of the 10 committees that include Michael, 4/10 or 40% also include Anthony.

The correct answer is C.

30. We can solve this as a VIC (Variable In answer Choices) and plug in values for x and r.

r	cents per person per mile	10
x	# of miles	20

Since there are 3 people, the taxi driver will charge them 30 cents per mile.

Since they want to travel 20 miles, the total charge (no discount) would be (30)(20) = 600.

With a 50% discount, the total charge will be 300 cents or 3 dollars. If we plug $r = 10$ and $x = 20$ into the answer choices, the only answer that yields 3 dollars is D.

The correct answer is D.

31. The third side of a triangle must be *less* than the *sum* of the other two sides and *greater* than their difference (i.e. $|y - z| < x < y + z$).

In this question:
$|BC - AC| < AB < BC + AC$
$9 - 6 < AB < 9 + 6$
$3 < AB < 15$

Only 13.5 is in this range. $9\sqrt{3}$ is approximately equal to 9(1.7) or 15.3.

The correct answer is C.

32. The question can be factored to $\frac{a - b}{(a - b)(a + b)}$

which can be further simplified to $\frac{1}{a + b}$

The question can be rephrased as "what is $a + b$?"

(1) SUFFICIENT: This tells us the value of $a + b$.
(2) INSUFFICIENT: This does not tell us the value of $a + b$.

The correct answer is A.

33. We can simplify the question $8^a(1/4)^b$:

$(2^3)^a(2^{-2})^b$
$(2^{3a})(2^{-2b})$
$2^{3a - 2b}$

We can rephrase the question as what is $3a - 2b$?

(1) SUFFICIENT: $b = 1.5a$, so $2b = 3a$. This means that $3a - 2b = 0$.
(2) INSUFFICIENT: This statment gives us no information about b.

The correct answer is A.

34. To find the ratio of r to s, we will need to be able to solve for r/s or solve for r and s independently.

The equation provided in statement 1 cannot be rewritten in the form r/s = some value. Statement (1) alone is NOT sufficient.

The equation provided in statement 2 can be simplified as follows:
$r^2 – s^2 = 7$
$(r + s)(r – s) = 7$.

However, this cannot be rewritten in the form r/s = some value. Thus, statement (2) alone is NOT sufficient.

Taken together, we can substitute the equation from statement (1) in the equation from statement 2 as follows:

$(r + s)(r – s) = 7$.
$(7)(r – s) = 7$.
$r – s = 1$.

Adding this equation to the equation from the first statement allows us to solve for r.

$$
\begin{array}{rl}
 & (r - s = 1) \\
+ & (r + s = 7) \\
\hline
 & 2r \quad = 8
\end{array}
$$

Thus, $r = 4$. If r is 4, then s must be 3. The ratio of r to s is 4:3. Both statements together are sufficient. The correct answer is C.

35. Try to find at least one pair of values for x and y that could work for each answer choice. This is possible for all answer choices except choice D.

There are no possible values for x and y that could satisfy the equation $x - y = 9$. Since both x and y are positive single digits, the greatest possible value for x is 9 and the smallest possible value for y is 1. Thus, the maximum difference between these two numbers is 8.

The correct answer is D.

36. 36^2 can be expressed as the product of its prime factors $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3$.

The factors of 36 can be found by considering all the various combinations of these 8 prime factors and adding the factor 1. A systematic approach of listing the factors is preferable:

The universal factor: 1
One prime factor: 2, 3
Two prime factors: 2×2, 2×3, 3×3
Three prime factors: $2 \times 2 \times 2$, $2 \times 2 \times 3$, $2 \times 3 \times 3$, $3 \times 3 \times 3$
Four prime factors: $2 \times 2 \times 2 \times 2$, $2 \times 2 \times 2 \times 3$, $2 \times 2 \times 3 \times 3$, $2 \times 3 \times 3 \times 3$, $3 \times 3 \times 3 \times 3$

Five prime factors: $2 \times 2 \times 2 \times 2 \times 3$, $2 \times 2 \times 2 \times 3 \times 3$, $2 \times 2 \times 3 \times 3 \times 3$, $2 \times 3 \times 3 \times 3 \times 3$

Six prime factors: $2 \times 2 \times 2 \times 2 \times 3 \times 3$, $2 \times 2 \times 2 \times 3 \times 3 \times 3$, $2 \times 2 \times 3 \times 3 \times 3 \times 3$
Seven prime factors: $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3$, $2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3$
Eight prime factors: $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3$

Therefore the factors of 36^2 are 25 in number.

This problem could also have been solved using a less well-known number property as follows:

Perfect squares always have an odd number of factors. For example consider the perfect square 36. 36's factors can be listed by considering pairs of factors (1, 36) (2, 18) (3,12) (4, 9) (6, 6). We can see that they are 9 in number. In fact, for any perfect square, the number of factors will always be odd. This stems from the fact that factors can always be listed in pairs, as we have done above. For perfect squares, however, one of the pairs of factors will have an identical pair, such as the (6,6) for 36. The existence of this "identical pair" will always make the number of factors odd for any perfect square. Since 36^2 is a perfect square, the answer must be odd. Only answer choice D is odd.

The correct answer is D.

37. Although one could use basic computation to determine the solution, an estimation strategy using "benchmark" percents is usually more efficient and less prone to error.

Benchmark percents are easily computable percents like 10% and 1%.

What is 10% of 16,000? **1600**
What is 1% of 16,000? **160**
What is .1% of 16,000? **16**
What is .01% of 16,000? **1.6**

Where does 6.4 fall in the above estimation? It falls between 1.6 and 16. Thus, 6.4 must be between .01% and .1%. The only answer choice that satisifes this condition is **.04%**.

The correct answer is B.

1. The original sentence contains several errors. First, "less availability" is incorrect when not used in a direct comparison: it begs the question "Less than what?" "Decreased availability" would be better here. Second, "greater demand" also begs the question "greater than what?" "Increased demand" would be better. Third, "Demand for scientific research" implies that the research is in demand, when in fact it is the platinum. "Demand in scientific research" would be better. Fourth, "remains consistently expensive" is redundant. "Remains expesnive" would be enough to convey the idea.

(A) This choice is incorrect as it repeates the original sentence.

(B) This choice is incorrect because while it replaces the "greater demand" with "increased demand," it leaves "less availability." "Demand for scientific research" should be changed to "demand in." The redundancy of "consistently" remains and a illogical comparison is drawn between platinum and "that of gold." It is unclear what the "that" refers to.

(C) CORRECT. This choice replaces "less availability" with "decreased availability" and "greater demand" with "increased demand." The word "consistently" is removed and "demand for" is changed to "demand in."

(D) This choice incorrectly keeps "Demand for scientific research," which should be changed to "demand in scientific research"

(E) This choice is incorrect because while it replaces the "less availability" with "decreased availability," it leaves "greater demand." "Remains at a consistently high price" is redundant. It is also more concise to compare the platinum to the gold, rather than the high price (of platinum) to "that of the gold" as is attempted in E.

2. The original sentence contains the expression "poor enough", which is incorrect in this context. "X enough to Y" is used when the focus is on some goal Y that is finally achieved because of a state of X, i.e. he ran fast enough to win the race. In this case, the fact that it closed was not the goal. The emphasis here is on the fact that the sales were so poor that the play closed. The idiom "so X that Y" is used when the focus is on X and as a result of excess X, Y

happened. Moreover, the placement of "only" is incorrect. "Only" should be placed immediately before the word is modifies. In this case, "only" modifies "two weeks", so it should be placed immediately before "two weeks."

(A) This choice is incorrect as it repeats the original sentence.

(B) The idiom "X enough to Y" should be replaced with "so X that Y" and the word "only" should be directly in front of the time phrase it modifies, "two weeks."

(C) The word "only" should be directly in front of the time phrase it modifies, "two weeks."

(D) CORRECT. This proper idiom "so X that Y" is used and the word "only" comes directly in front of the time phrase it modifies, "two weeks." Also the passive voice is used for the verb closed: "was closed." This is probably preferable since a play technically gets closed (it doesn't close itself). Nonetheless, colloquially people say "the play closed."

(E) When using the idiom "so X that Y," the result, Y, needs to come right after the word "that." Here the modifier "after only two weeks" comes before Y, the fact that it closed. In addition, the active form of the verb closed is used here, where the passive is preferred (see D).

3. The original sentence contains the construction "from X to Y", which requires parallelism between X and Y. In this case, however, we have a regular noun phrase "practical communication" and a verbal (gerund) "establishing". We need to find a choice that puts both X and Y in the same form.

(A) This choice is incorrect as it repeates the original sentence.

(B) This answer choice changes X to a gerund and Y to a regular noun phrase. X and Y are still not parallel. Also the past participle form of the verb "engaged" is preferable to the present participle "engaging" to describe the people here.

(C) Adding the word "the" in front of Y here doesn't change the fact that the regular noun phrase is not parallel to the gerund.

(D) Adding the word "the" in front of Y here doesn't change the fact that the regular noun phrase is not parallel to the gerund. Also the past participle form of the verb "engaged" is preferable to the present participle "engaging" to describe the people here.

(E) CORRECT. This choice correctly changes Y to a regular noun phrase "the establishment of hierarchy," so it is now parallel to X, "practical communication."

4. The conclusion is that nurses should examine patients to determine which deserve to be seen first by the doctors. The basis for this claim is that hospitals lack adequate numbers of physicians.

(A) The idea of having nurses make the intial examination does not depend on increasing the medical staff.

(B) The main premise for the conclusion was that patients ended up waiting due to an undersupply of doctors. there weren't enough doctors to perform the initial examination. If the doctors perform the initial examinations there will be no time saved.

(C) The conclusions rests on whether or not the nurses would be able to perform the examinations, not on what the result of them doing the examinations would be.

(D) The hospitals don't need to be *fully* staffed with nurses for the nurses to perform the initial examination.

(E) CORRECT. This argument is valid only if we assume that nurses are competent to determine which patients merit immediate treatment.

The correct answer is E.

5. The conclusion is that a company should wait until purchases of an old device have begun to decline before introducing a new device. The basis for this claim is that consumers either do not buy the old device because they anticipate the new device or they do not buy the new one out of resentment over having already spent

money on the old one. We are asked to strengthen the argument.

(A) The change in the price of the new technology does not influence whether a company should wait until sales begin to decline on an old technology before introuducing a new one.

(B) CORRECT. This states that media outlets such as television and magazines often report on the planned introduction of new devices while sales of old devices are still strong. This supports the claim that consumers are aware of the impending introduction of new devices, and that companies should act accordingly.

(C) The superiority of new technology is irrelevant to the claim that companies should wait until the decline in sales of an older technology.

(D) The number of technology purchases per year does not directly relate to this argument. The argument is about waiting until the consumer demand declines before introducing a new technology. Consumers get wind of the new product and that hurts profitability.

(E) The passage makes no mention of whether the technologies belong to the same company or different companies.

The correct answer is B.

6. The correct answer is B.

The question asks us to determine which of the choices was a motivation in the creation of the system of value congruence. According to the passage (lines 6-9), value congruence was one of the theories that was posited "to discover what allows some companies to foster high employee morale while other companies struggle with poor productivity and high managerial turnover."

(A) Poor productivity, high managerial turnover, and employee morale have little to do with the liability of upper management for employee satisfaction.

(B) CORRECT. Poor productivity, high managerial turnover, and employee morale are related to a company's internal harmony or lack thereof. The proof sentence does not correlate directly to this answer choice, making this a fairly difficult question.

(C) Poor productivity, high managerial turnover, and employee morale have little to do with the earning potential of employees.

(D) Poor productivity, high managerial turnover, and employee morale have little to do with the factors influencing managerial success.

(E) Poor productivity, high managerial turnover, and employee morale have little to do with the discrepancies between a company's goals and the values of its employees.

The correct answer is B

7. The question asks us to determine which of the choices would be the best use for perceptual fit ("PF"). The passage defines perceptual fit as the congruence between a given employee's perception of his company's values and the perception of the company's values held by other employees. Therefore, we need to determine which answer choice could be determined using this measure.

(A) CORRECT. This choice suggests that PF could be used to determine whether a company ought to make its policies and goals more transparent. PF will indicate to a company whether its employees generally see the company's values the same way. This would be useful in determining whether the company needed to do a better job in making those values clear to its employees.

(B) This choice suggests that PF could be used to determine whether a company ought to provide sensitivity training for its management. PF is not relevant to issues of sensitivity training.

(C) This choice suggests that PF could be used to determine whether a company ought to create more opportunities for interaction among workers. Since PF is used to determine whether employees hold the same view of the company's values, this choice may seem attractive. But it does not specifically relate to the notion of company values, as choice A does.

(D) This choice suggests that PF could be used to determine whether a company needed to address employee grievances more directly. PF is not related to the concept of company values.

(E) This choice suggests that PF could be used to determine whether a company ought to have a more elaborate orientation program for new employees. PF is not related to the concept of company values as seen by employees.

The correct answer is A.

8. This question asks us to find a choice that describes the primary focus of the passage. The correct answer must cover the entirety of the passage without misrepresenting it.

(A) This choice mentions a comparison between a new theory and a "discredited theory". Since there is no discussion of a discredited theory in the passage, this choice is incorrect.

(B) This choice mentions a "detailed analysis of a particular case". Since the passage does not focus on a particular case, this choice is incorrect.

(C) This choice describes the passage as challenging an "old view of employee commitment". Since the passage does not discuss old views of employee commitment, this choice is incorrect.

(D) CORRECT. This choice describes the passage as "promoting a new method of measuring the likelihood of corporate success" – so far, so good – and as "explaining its benefits". This covers the entirety of the passage and describes its purpose and function accurately.

(E) This choice states that the passage defends "a proposed system of corporate analysis through examples of its success." Since the passage does not discuss examples of success, this choice is incorrect.

The correct answer is D.

9. The original sentence contains the pronoun "them" but it is not grammatically clear whether the pronoun's antecedent is "bowers of sticks and twigs" or "females." Logically, we know that the antecedent is "bowers", so we need to find a replacement that makes this clear. Moreover, the bowerbird does not derive its name from the fact that it builds bowers, but from the bowers themselves.

(A) This choice is incorrect as it is the same as the original sentence.

(B) CORRECT. This choice rewrites the sentence to make it clear that the name derives from the bowers and not from the fact of building them, and it also eliminates the pronoun "them" and instead refers to "structures" to make the relationship clear.

(C) This choice does not make it clear that the males build the bowers and decorate them. Instead, it seems to suggest that the bowers exist on their own and that the male uses only the flowers and vegetation to attract females.

(D) This choice uses the phrase "having decorated them" improperly. It is not necessary to use "having" in this context because the sentence describes an ongoing event, not one that occurred in the past.

(E) This choice is in the passive voice, which is not preferable to active voice when a grammatical active version (such as B) is also offered. Moreover, the placement of the modifier "that are built by the males" incorrectly implies the sticks and twigs are built by the males. Also the phrase "and decorated with flowers and other vegetation to attract females" seems to further imply that the sticks and twigs are also decorated with flowers...

The correct answer is B.

10. The original sentence begins with a modifier ("Before its independence") that clearly describes India, though the subject of the main clause is Britain. Moreover, "ruled India as a colony" is wordy and the verb "ruled" is in the simple past when it would be better in the past perfect (two past actions, one of which was

earlier). Finally, "they" has no grammatical antecedent and "would" is not a proper tense here (the simple past is required).

(A) This choice is incorrect as it repeats the original sentence.

(B) Britain should not be the recipient of the modifier "Before its independence."

(C) The pronoun "they" has no logical antecedent. Logically it probably refers to the British, but the British do not appear in the sentence. Also the past perfect tense would have been preferable here (had been ruled) since the ruling occurred before the relinquishing of the power.

(D) The phrase "ruled as a colony by Britain" is awkward and unclear. The placement of the modifer "by Britain" makes it unclear that the ruling is being done by Britain.

(E) CORRECT. This correctly places India as the recipient of the opening modifier. The past perfect is utilized to indicate that different times in the past. Notice that the word "ruled" has been removed from this answer choice, however, this did not result in a change of meaning. To be a colony of the British is to be ruled by the British. The exclusion of the pronoun its in the beginning of the sentence (see answer choices A and C) is incidental. The sentence would have been correct with the pronoun its as well.

The correct answer is E.

11. The original sentence states that "a higher interest rate is only one of the factors...that keeps..." The clause "that keeps the housing market from spiraling out of control" is describing the word "factors." Since "factors" is plural noun and "keeps" agrees with singular nouns, we need to find a sentence that replaces "keeps" with "keep". Also, "like it did earlier in the decade" is incorrect. When comparing clauses (i.e., a phrase containing a sunject and a verb), we must use "as" instead of "like." For example, "She sings like her mother" and "She sings as her mother does" are both correct, but "She sings like her mother does" is not.

(A) This choice is incorrect as it repeats the original sentence.

(B) CORRECT. This choice remedies the verb agreement issue by using the singular "keep." It also correctly changes the comparison word from "like" to "as."

(C) This subject-verb issue with "keeps" remains.

(D) The sunject-verb issue is remedied, however, the comparison is a faulty one. "Like" is used to compare two nouns and here the second part of the comparison is "earlier in the decade." The phrase "it did" is needed here to logically complete the comparison, in which case, "as" must be used to draw the comparison.

(E) The subject-verb issue is remedied, however, the word "as" should be used instead of "like."

The correct answer is B.

12. The correct answer is E.

The conclusion is that the cause of the lower rate of absenteeism is fear of losing money. The basis for that claim is that two other possible explanations – improved health insurance and improved working conditions – are not present in every case. This argument falsely assumes, however, that these three factors are the only possible explanations.

(A) This answer choice does not address the fact that there may be other factors causing absenteeism to go down. If anything, it simply strengthens the idea that not having health insurance should contribute to more absenteeism.

(B) This answer choice does not address the fact that there may be other factors causing absenteeism to go down. Furthermore, the argument concludes that absenteeism has gone done across the board, for all types of companies and that the reason is fear of reduced pay. This choice seems to suggest that somehow that the this fear is more of an issue for those companies with poor working conditions.

(C) Employees being honest about the reasons they miss work has little to do with the claim of the argument about why employees are missing work. The premises cited to do not rely on employee disclosure.

(D) The definition of absenteeism has little to do with the explanation of why it is occurring. Furthermore, there seems to be little ambiguity here with the definition.

(E) CORRECT. This addresses the argument's primary assumption that these three are the only possible explanations for absenteeism.

The correct answer is E.

13. The conclusion of the argument is that the rate of extinction will not increase in this century. The basis for that conclusion is that 47 species of North American insect vanished between 1900 and 1950, but only 23 such species vanished between 1950 and 2000. We are asked to select a question which would, when answered, provide information that would help us evaluate this claim.

(A) This is irrelevant: the argument does not depend in any way on the distinction between native and non-native insect species.

(B) CORRECT. This points to an unwarranted assumption on the author's part. The author assumes that the downward trend in extinctions is NOT due to human intervention. It may be, for example, that humans have made an effort to save the insects and that without this help the rate of extinction would have been even greater than in the previous fifty-year period.

(C) This is irrelevant: the argument does not depend in any way on the experience of the zoologists. It hinges instead on the trend that the author uses to justify his point.

(D) This is irrelevant: the argument does not depend in any way on a comparison between insects and mammals.

(E) This is irrelevant: the argument does not depend in any way on the number of acres of woodland set aside as refuges. Instead, it depends on the downward trend in insect extinctions cited by the author.

The correct answer is B.

14. The conclusion of the argument is that renewable sources of energy such as sun and wind are more economical than nonrenewable sources such as oil and gas because the renewable sources require minimal maintenance costs while the prices for nonrenewable sources fluctuate according to availability. We are asked to find an assumption underlying this argument. In order for this argument to be valid, it must be true that renewable sources of energy can be relied upon. Otherwise, there will be the initial cost of setting them up plus the costs of nonrenewable fuels to compensate for the erratic availability of the renewable sources.

(A) The utility companies' claim has to do with the economics of the new energy sources, not not with how they are received by the public.

(B) The future availability of traditional energy sources has little bearing on the economic viability of the new energy souces.

(C) CORRECT. If we assume that weather patterns are consistent and predictable, then it is true that solar and wind power can be more economical than oil and gas. If weather patterns are not consistent and predictable, then solar and wind power are not reliable and thus not necessarily more economical.

(D) The technology needed for the new fuel sources could be more expensive than the technology needed for old fuel sources (combustion) and the new fuel sources could still be more economic than the old fuel sources. The companies site the fact that the new resources cost much less money to maintain than the nonrenewable fuels, whose prices fluctuate vastly.

(E) This does not directly affect the argument. Energy produced through combustion could be made more economical and the new fuels might still be more economical than the older combustion fuels.

The correct answer is C.

15. The passage gives the following as examples of "language from the center" (lines 33-39): "he directs rather than responds; he makes statements rather than asks questions; he contradicts, argues, and disagrees; he uses his experience persuasively; and he

maintains an air of impersonality in the workplace."

(A) Requesting help does not fit into any of the above examples.

(B) CORRECT. Explaining the benefits of a new procedure by drawing on the procedure's success in another setting is an example of "He uses his experience persuasively.".

(C) Believing that one has been wrongly criticized does not fit the bill of contradicting, arguing, or disagreeing.

(D) A manager soliciting opinions from his workforce does not fit into any of the above examples.

(E) Refusing to alter one's behavior is not an example of contradicting, arguing, or disagreeing.

The correct answer is B.

16. The passage states in the third paragraph (lines 59-63): "McGinty argues that true power comes from a deep understanding of when to use which style and the ability to use both as necessary." This suggests that she would agree with the assertion that powerful people are both authoritative (i.e., use language from the center) and inclusive (i.e., use language from the edge). This is reflected in choice C.

The correct answer is C.

17. The question asks for the primary focus of the passage. The answer to this must take the entirety of the passage into account without misrepresenting its focus. The passage centers on an evaluation of McGinty's book, which proposes a new way to look at communication in business settings.

(A) The passage focused specifically on communication in the business setting, not a "certain framework."

(B) The passage was more of an explication of McGinty's model of business communication; it did little to list the advantages to of a new approach to business communicaiton.

(C) No theory of business was put forth, nor was a contraversy regarding this theory highlighted.

(D) CORRECT. The book indeed presents a model of business communication, the details of which were presented in this passage.

(E) There was no outdated model of personnel management presented or for that matter defended here.

The correct answer is D.

18. The fourth paragraph presents a final summary of McGinty's argument and places it in the context of management theory generally by comparing it to current trends in the field.

(A) CORRECT. This best reflects the function of the fourth paragraph.

(B) The usefulness of McGinty's thesis is not questioned in the fourth paragraph.

(C) While the focus of McGinty's theory of communicaiton is contrasted that of general management theory, the primary purpose of this last paragraph is not to show the shortcomings of mangagement theory. It is to summarize McGinty's theory in the context of the rest of the field.

(D) No alternative view of McGinty's proposal is presented in the final paragraph.

(E) No additional support is offered for McGinty's theory in the final paragraph.

The correct answer is A.

19. The official's conclusion is that people who claim that the U.S. is more vulnerable than other nations because of the country's lack of a national vaccine laboratory are disloyal and incorrect. His basis for

that conclusion is that the U.S. has prominent doctors, ranks in the middle in terms of life span, infant mortality, and nutrition, and people from around the world come to the U.S. for medical care. We are asked to find the choice that does NOT point out a flaw in the official's logic.

(A) CORRECT. This choice states that the official accepts that the quality of physicians and hospitals is a major factor, albeit not the only one, affecting the public's vulnerability to disease. This does not contradict anything in the official's argument, nor does it make light of any flaws in the official's logic.

(B) This choice highlights the official's logical jump from "disloyal" to "wrong" in the phrase "these critics are disloyal and thus wrong about the public's vulnerability." There is no connection between disloyalty and wrongness. This is a flaw.

(C) If the Europeans that the official cited are overwhelmingly wealthy men over the age of fifty, the official relied on an unrepresentative sample to justify his claim. What is true of wealthy older European men is not necessarily true of Europeans or non-Americans generally. This is a flaw.

(D) The fact the official relies on health statistics that are based on a complete accounting of deaths, injuries, and illnesses suffered by the American public from all causes, including the ten percent attributable to infectious diseases means that the official is not limiting his evidence to cases relating to vaccines. Other causes of death are not relevant to the argument. This is a flaw.

(E) If the U.N. health ranking that the official cited is based on an almost complete survey of its members, the ranking of the United States may be misleading, since it may not compare the U.S. to nations of similar economic standing. This is a flaw.

The correct answer is A.

20. We are asked to draw a conclusion based on the educator's statements. The educator states that children who demonstrate early talent for music are encouraged to pursue it while children who do not show such talent are not encouraged and thus deprive

themselves of the opportunity to develop a *latent* talent. We must find an answer choice that is based only on these statements.

(A) This choice states that music education should not devote special attention to talented students. This goes beyond the scope of the educator's statements.

(B) This choice states that everyone has the potential to learn music. This goes beyond the scope of the educator's statements. The educator is arguing against classifying students as musically inept at an early age because they might have *latent* talent that is not showing itself. He is not necessarily

saying that everyone has the potential to learn music.

(C) CORRECT. By referring to the latent talent that some children may be neglecting, the educator is implying that not all talent shows its face at an early age.

(D) The fact that children who are directed towards other activities have learned to think of themselves as musically inept doesn't mean that children are particularly sensitive to criticism from adults. The being "directed towards other activities" is not necessarily best characterized criticism, and furthermore, it is not just children that tend to think themselves incapable of something if they don't partake in that activity.

(E) The educator is not necessarily claiming that all children should study music.

The correct answer is C.

21. The original sentence contains several errors. First, the pronoun "their" logically refers to alpacas, yet alpacas are not mentioned in the sentence. Instead, we have "alpacas' fleece," i.e. we have alpacas' in the possessive form. Second, the singular verb "fetches" is paired with the plural noun phrase "five pounds of fleece." Third, the use of the semicolon here is improper. A semicolon is used to separate two closely related clauses (subject + verb). Here, however, what follows the semicolon is not a clause since it can not stand alone as a sentence. Lastly the word "while" is preferable to "even if" or "even though" for showing contrast.

(A) This choice is incorrect as it reapeats the original sentence.

(B) This choice does not remedy the pronoun issue, merely replacing "their" with "its". The "its" now seems to replace fleece, however, it is not the market value of the fleece to which the Alpacas' fleece is being compared. It does not remedy the subject-verb or semicolon problems, either.

(C) This choice does not remedy the pronoun issue, merely replacing "their" with "its". The "its" now seems to replace fleece, however, it is not the market value of the fleece to which the Alpacas' fleece is being compared. This choice does fix the semicolon issue by getting rid of it, however, the construction while... even though... makes no sense. The subject-verb issue (pounds fetch) has been corrected.

(D) CORRECT. The pronoun issue is solved by replacing the pronoun "the animal's." The semicolon correctly separates two independent clauses. The "while" correctly separates two contrasting ideas and the verb "fetch" agrees with "pounds."

(E) The comparison between "worth" and "value" is illogical, as is their description as "little." Nonetheless, the pronoun issue is remedied by replacing "their" with "the animal's". The semicolon is used correctly here (two clauses). The subject-verb agreement remains (pounds fetches) and the "while" construction from D is preferable to the "even though" to express the contrast in the second clause.

The correct answer is D.

22. In the original sentence, the verb "had implemented" is in the past perfect tense, indicating that this event occurred at some point before the commissioner spoke. The verb "will try", however, is in the simple future. When the future is indicated from the point of view of the past, the simple future is not used. Instead, the conditional is required. For example, "The man said that he would buy a new car" is preferable to "The man said that he will buy a new car."   We need to find a conditional verb. Moreover, the pronoun "it" begins a new clause and thus requires repetition of "that" in order to make clear, using parallel structure, that this new clause is

still something that the commissioner said. For example, "The man said that he would buy a new car and that he would drive it everywhere" is preferable to "The man said that he would buy a new car and he would drive it everywhere."

(A) This choice is incorrect as it repeats the original sentence.

(B) This choice does not offer the conditional "would try", though it does offer another "that". The past tense "tried" is definitely wrong here because the trying will happen "in the future."

(C) This choice uses the past perfect tense "had tried" where the conditional "would try" is preferred. An extra "that" is needed to make the two clauses "the government had..." and "it had tried" parallel.

(D) This is a very tempting choice as it fixes the verb tense to the conditional. However, an extra "that" is needed to make the two clauses "the government had..." and "it would try" parallel.

(E) CORRECT. This choice provides the conditional and another "that".

The correct answer is E.

23. The antecedent of the pronoun "they" is "artwork". But "they" is plural and "artwork" singular, so we need to find a choice that changes "they" to "it". Moreover, "people who a trip to a major city may be too expensive for" is incorrect. It should be "people for whom..."

(A) This choice is incorrect as it repeats the original sentence.

(B) The pronount the is incorrect, as is the construction "people who a trip to a major city may be too expensive for."

(C) The construction "people who a trip to a major city may be too expensive for" is incorrect.

(D) CORRECT. The pronoun "it" correctly refers to the singular antecedent "artwork" and "for whom a trip to a major city may be too expensive" is the correct modifier of people.

(E) The pronoun "it" is correct but the construction "people who a trip to a major city may be too expensive for" is not.

The correct answer is D.

24. The question asks about the primary concern of the passage. This is the equivalent of asking about the author's purpose in writing the passage. We need to find an answer choice that takes the entirety of the passage into account without misrepresenting the author's intent.

(A) This choices states that the author is concerned with "illuminating the physiological consequences of Tay-Sachs disease." This focuses on only a subtopic within the passage.

(B) CORRECT. This choice states that the author is concerned with "explaining the importance of research on a specific disease to other diseases of that type." This accurately captures the main thrust of the passage. The research on Tay-Sachs disease is used in the passage to explain the causes of other lysosomal storage diseases.

(C) This choice states that the author is concerned with "arguing for a more detailed examination of lysosomal storage diseases." Though the author does suggest in the last paragraph that more research should be done, this is not the focus of the passage as a whole.

(D) This choice states that the author is concerned with "challenging a traditional view of a class of diseases as incomplete." This is not consistent with the passage. The passage focuses on the causes of a certain class of diseases.

(E) This choice states that the author is concerned with "describing the implications of genetic mutations for mortality rates." While there is some discussion of these issues with regards to Tay-Sachs disease, this is not the focus of the passage.

The correct answer is B.

25. The question asks broadly which of the choices is a valid inference from the information in the passage. The best approach here is simply to evaluate the choices one by one.

(A) This chocie states that it can be inferred that lysosomal storage diseases "are generally caused by mutations to the hexosaminidase gene." The passage states, however, that mutations in this gene are responsible for Tay-Sachs disease (line 71). There is no information suggesting that it is responsible for the entire class of storage diseases.

(B) This choice states that it can be inferred that lysosomal storage diseases "are undetectable until physical symptoms are present." There is not enough information in the passage to support this choice.

(C) CORRECT. This choice states that it can be inferred that lysosomal storage diseases "can be fatal even when allowing some enzymatic activity." This can be inferred from the fact that people suffering from juvenile Tay-Sachs have "extremely crippled hexosaminidase activity" (lines 91-93) and generally live to only 15 years of age (line 49).

(D) This choice states that it can be inferred that lysosomal storage diseases "are most lethal when onset is in a patient's infancy." The information in the passage relating to infant mortality is given in the specific context of Tay-Sachs disease. We cannot know whether this pattern holds true for other diseases of this type.

(E) Choice E states that it can be inferred that the causes of lysosomal storage diseases were unknown before the 1950s. The passage states, however, that the causes of Tay-Sachs disease were unknown before that time. We do not have any information about lysosomal storage diseases generally.

The correct answer is C.

26. The question asks which of the answer choices poses a question that would be useful in establishing the relevance of the Tay-Sachs research to lysosomal storage diseases generally.

(A) This choice Choice A asks whether patients suffering from Tay-Sachs have the same mortality rate as those suffering from other storage diseases. The passage does not focus on mortality rates; instead, it focuses on the genetic causes of the diseases.

(B) This choice asks whether other storage diseases affect the hexosaminidase gene. In the passage, however, a mutated form of this gene is responsible for Tay-Sachs. It is not Tay-Sachs that is responsible for the mutated gene.

(C) This choice asks how many different mutations are present in the defective genes responsible for other storage diseases. This does not link Tay-Sachs with any other disease of its type.

(D) CORRECT. This choice asks whether the onset of other storage diseases varies with the location of mutations in the DNA sequence. This speaks directly to the research done on Tay-Sachs, in which the onset was linked to the location of mutations. Demonstrating a similar pattern in other diseases would show that it is a universal characteristic of these diseases.

(E) This choice asks what purpose GM2 ganglioside serves in the human body. This does not link Tay-Sachs directly with any other disease or storage diseases generally.

The correct answer is D.

27. The conclusion is that a developer who wishes to make a large profit would be wise to buy
urban waterfront lots and erect residential buildings on them. The basis for that claim is that people pay large sums for beach front homes. We are asked to strengthen this argument.

(A) This choice states that people have more buying power today than in previous centuries. This does not strengthen the claim that a developer will make money on urban waterfront properties.

(B) CORRECT. This choice states that people will be willing to spend large sums of money on properties in predominantly industrial or commercial districts. Since we know from the argument that the urban waterfront has traditionally be industrial, this fact strengthens the claim that a developer can make a profit on urban waterfront properties.

(C) This choice states that many urban waterfront lots are available for purchase. This does not suggest, however, that a developer will be able to sell them after he builds on them.

(D) This choice states that many coastal cities are giving tax breaks to developers who rehabilitate the waterfront. But this does not suggest that anyone will buy the developed properties.

(E) This choice states that properties in the interior of cities are more expensive than those on the waterfront. This does not suggest that a developer can make a profit on waterfront properties.

The correct answer is B.

28. The correct answer is A.

The conclusion of the argument is that the city will see many of its prized industries relocate to more convenient cities and the city's financial health will be jeopardized if the city does not make changes soon to the transportation network. This is also the second bolded sentence. The first bolded sentence states that most of the network was put in place at a time when the city was much smaller in both area and population. We need to find a choice that correctly describes both of these bolded statements.

Choice A states that the first statement is an explanation of a current state of affairs. This is consistent with the passage. The first bolded statement explains why the transportation network is unsuitable for the city today. Choice A goes on to describe the second bolded statement as a prediction based on that state of affairs. This is also consistent with the passage: the second bolded statement predicts what will happen as a result of the inadequacy of the current transportation network. Correct.

None of the other choices correctly describes the two bolded statements.

29. (A) This choice takes the passage's claim that creativity and business acument rarely go hand in hand to an extreme.

(B) CORRECT. The passage states that **most** creative types are less skilled in business than the average white-collar worker who does not work in a creative field. This implies that some creative types are not less skilled than the average white-collar worker who is not creative.

(C) This choice again takes the passage's claim that creativity and business acument rarely go hand in hand to an extreme. Creativity and business acumen are not mutually exclusive.

(D) The passage does not say that all white-collar workers are successful nor does it say that no creative professionals are successful.

(E) The passage makes a distinction between creative talent and business acumen. This does not mean that there are no aspects of business that fall under the realm of creativity.

The correct answer is B.

30. The conclusion of the argument is that the media are wrong in saying that the economy is entering a phase of growth and prosperity. The basis for that claim is that the number of people filing for bankruptcy has increased every month for the last six months and that bankruptcy lawyers are busier than they have been in years. In order for this argument to be valid, however, the author has to assume that the increase in the number of bankruptcies is a result of the state of the economy and not the result of something unrelated.

(A) This does not have to be true for the claim that the media are wrong about the economy to hold. It is possible that unemployment rates are useful indicators of growth and prosperity and that media is still wrong about the economy (i.e. if there are other indicators that show problems in other areas).

(B) This does not have to be true for the claim that the media are wrong about the economy to hold. It is possible that productivity is a good measure of economic growth and that media is still wrong about the economy (i.e. if there are other indicators that show problems in other areas).

(C) CORRECT. This has to be true for the claim that the media are wrong about the economy to hold. If legislation has recently been passed that makes it easier to obtain bankruptcy, this would explain away the counterevidence to the media's argument. The increased number of bankruptcies could have been the result of the easier process rather than of a poor economy.

(D) This does not have to be true for the claim that the media are wrong about the economy to hold. An increase in the number of bankruptcy lawyers would not explain the increase in the number of bankruptcy filings.

(E) This does not have to be true for the claim that the media are wrong about the economy to hold. Even if the media did not often misrepresent the current state of economic affairs, the argument that the media are wrong might still hold.

The correct answer is C.

31. The original sentence intends to identify a sparrow by the fact that it lives in cypress groves, eats certain berries, and has certain coloring. All these facts about the sparrow must be presented in parallel form. However, in the original sentence, these facts are presented in different forms. We need to find a choice that presents them all in parallel fashion. Moreover, "whose coloring is different from all other sparrows" is incorrect. The sparrow's coloring is different from the coloring of other sparrows, not from the sparrows themselves. We need to find a choice that makes this clear.

(A) This choice is incorrect as it repeats the original sentence.

(B) CORRECT. This choice remedies the parallelism issue: "lives only in...., is almost wholly... and has coloring..." The comparison issue is also remedied: "has coloring different from **that** of all other sparrows." The comparison is now logically drawn between the coloring of the new species and the coloring (that) of other species.

(C) This answer choice remedies neither the parallelism issue:

"living..., is almost..., and whose coloring," nor the illogical comparison (coloring and sparrows).

(D) While this answer choice remedies the comparison, the parallelism issue is still there from the original sentence.

(E) This parallelism issue has been remedied in this answer choice but the illogical comparison has not. In addition, the correct idiomatic expression is different from, not different than.

The correct answer is B.

32. The correct answer is E.

The original sentence begins with a modifier "In response to growing demand for high-end vehicles" but this modifier has no logical subject within the main clause. Moreover, the pronoun "they" is ambiguous, as it could grammatically refer to either the interiors or to the cars. We know that the intended antecedent of "they" is the cars, so we need to find a choice that makes this clear.

The only choice that remedies both issues without creating any new ones is E.

33. The correct answer is B.

The original sentence contains several errors. First, "it was" is wordy and unnecessary. Second, "usual custom" is redundant. Third, "it" has no antecedent. Fourth, "as much meat that" is incorrect; it should be "as much meat AS".

Choice A repeats the original sentence. Incorrect.

Choice B remedies all of the issues. Correct.

Choice C does not remedy the wordiness and redundancy. Nor does it remedy the "as much that" problem. Incorrect.

Choice D does not remedy the redundancy. Incorrect.

Choice E does not correct the wordiness or the "as much that" problem. Moreover, it introduces a new error by using "which" without a grammatical antecedent: "which" must follow the noun it modifies.

34. The correct answer is C.

The question asks us to identify the purpose of the first paragraph: what role does it play in the context of the passage as a whole? The first paragraph presents historical information about the relationship between East and West Germany. This information is given as background to the subsequent paragraphs. We need to find an answer choice that is consistent with this analysis.

The only choice that is consistent with this is Choice C: "Information that is necessary for understanding the main argument of the passage is presented".

35. The correct answer is E.

The question asks us to identify the author's reason for believing that German reunification could succeed. According to the passage, "[reunification] would have been preposterous had not West Germany possessed the resources to accomplish the task." In other words, West Germany was prosperous enough to afford this major undertaking.

Choice E states that West Germany was a materially stable country. This is consistent with the information contained in the passage. Correct.

36. The correct answer is B.

The question asks us to identify the reason that the author mentions the United States in the passage. In the third paragraph, the author asks whether West Germany was "up to the task" of re-unification. This is followed by the example of Italy as a government that does spend the necessary resources to help its underperforming regions.

Then, the author mentions the United States as a counter example: "In contrast, in the United States, the local population bears the burden of varying economic performance. For example, the American South is allowed to exist with much higher rates of poverty and lower education than the rest of the nation."

The use of the word "allowed" suggests that the author does not approve of the situation in the United States. Further, the very next paragraph begins . . ."Rather than allow East Germany to fall into total disrepair . . . " as if to further contrast the German government with that of the United States.

Choice B states that the author mentioned the U.S. to provide an example of a situation seen as undesirable. This is consistent with our analysis. Correct.

37. The correct answer is D.

The question asks us to infer something from the passage regarding the relationship between West Germany and France. Here is what the passage says about France: "Other nations were already wary of a united Germany. France, perpetual competitor, saw Germany’s size advantage increase overnight." We need to find an answer choice that can be deduced from this information ALONE.

Choice D states: "France did not view its economic position against West Germany as unassailable." This is implied by the information in the passage. Since France is given as an example of a nation that was wary of a united Germany, we can deduce that it did not view its economic position against West Germany as unassailable. Correct.

38. The correct answer is A.

The conclusion of the argument is that dousing the roofs with water was a wasted effort. The basis for this claim is that the houses of those who doused their roofs still suffered fire damage. We are asked to weaken this conclusion.

Choice A states that the houses of owners who did not douse the roofs with water suffered appreciably more fire damage than did those of owners who did douse the roofs with water. This weakens the conclusion because it suggests that dousing the roofs was not a wasted effort. Correct.

39. The correct answer is D.

The hydroelectric dams in Country X generate "more than enough power...to meet the country's energy needs." Yet, Country X still experiences shortages and outages. This could result if the energy generated in Country X does not remain in Country X. Only choice D addresses this.

40. The correct answer is E.

The original sentence contains a subject-verb problem: "the spectacular rise and fall of Napoleon" is a plural noun, but the corresponding verb "was" is singular. Moreover, "having been created" is unnecessarily complex. "Created by" would have been sufficient. Finally, it is not the "toppled monarchy" that created the vacuum but rather the fact that the monarchy was toppled.

Choice A repeats the original sentence. Incorrect.

Choice B does not correct the subject-verb problem. Incorrect.

Choice C corrects the subject-verb problem but not the "toppled monarchy" issue. Incorrect.

Choice D does not correct the subject-verb issue. Incorrect.

Choice E corrects all the problems without creating any new ones. Correct.

41. The correct answer is D.

The original sentence contains the unidiomatic "considered as being". The correct idiom is simply "considered", as in "I considered you a friend." Also, "was the subject...over the years" is incorrect. It should be "has been the subject...", since the speculation began in the past and continues to the present. Finally, "attributed by" is not idiomatic here. It should be "attributed to."

The only choice to remedy all these issues is D.