GMAT SAMPLE PAPER
PRACTICE QUESTIONS & ANSWER KEY(SET 2)

Q 1

Correctly measuring the productivity of service workers is complex. Consider, for example, postal workers: they are often said to be more productive if more letters are delivered per postal worker. But is this really true? What if more letters are lost or delayed per worker at the same time that more are delivered?

The objection implied above to the productivity measure described is based on doubts about the truth of which of the following statements?

(A) Postal workers are representative of service workers in general.
(B) The delivery of letters is the primary activity of the postal service.
(C) Productivity should be ascribed to categories of workers, not to individuals.
(D) The quality of services rendered can appropriately be ignored in computing productivity.
(E) The number of letters delivered is relevant to measuring the productivity of postal workers.

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Argument Evaluation

Situation

In considering how best to measure productivity, the assumption is made that the more letters postal workers deliver, the more productive they are. This assumption is then challenged: What if the number of delayed and lost letters increases proportionately with the number of letters delivered?

Reasoning

Which statement would NOT be accepted by those objecting to the measure? The point of the objection is that the number of letters delivered is, by itself, an inadequate measure of postal workers' productivity. The challenge introduces the issue of the quality of the work being

performed by suggesting that the number of misdirected letters should also be taken into account. The challenge is based on rejecting the idea that quality can be ignored when measuring productivity.

A. The argument uses postal workers as an example; the challenge does not question the fairness of the example.
B. Letter-delivery is assumed to be the primary activity of postal workers because their productivity is measured on that basis; the challenge does not reject this point.
C. The argument does discuss a category of workers, postal workers, rather than individuals; the challenge does not reject this point.
D. **Correct.** This statement properly identifies the point that is the basis of the challenge to the measure; the objection does NOT accept the position that quality can be ignored in evaluating productivity.
E. There is no doubt that counting letters delivered is part of measuring productivity; the challenge is to its being the only measure.

The correct answer is D.

Q 2

$$\frac{1}{1+\frac{1}{2+\frac{1}{3}}}=$$

- ○ $\frac{3}{10}$
- ○ $\frac{7}{10}$
- ○ $\frac{6}{7}$
- ○ $\frac{10}{7}$
- ○ $\frac{10}{3}$

Answer 2
Answer Explanation
Work the problem.

$$\frac{1}{1+\frac{1}{2+\frac{1}{3}}}=\frac{1}{1+\frac{1}{\frac{7}{3}}}=\frac{1}{1+\frac{3}{7}}=\frac{1}{\frac{10}{7}}=\frac{7}{10}$$

The correct answer is B.

Q 3
Increases in the level of high-density lipoprotein (HDL) in the human bloodstream lower

bloodstream cholesterol levels by increasing the body's capacity to rid itself of excess cholesterol. Levels of HDL in the bloodstream of some individuals are significantly increased by a program of regular exercise and weight reduction.

Which of the following can be correctly inferred from the statements above?

(A) Individuals who are underweight do not run any risk of developing high levels of cholesterol in the bloodstream.
(B) Individuals who do not exercise regularly have a high risk of developing high levels of cholesterol in the bloodstream late in life.
(C) Exercise and weight reduction are the most effective methods of lowering bloodstream cholesterol levels in humans.
(D) A program of regular exercise and weight reduction lowers cholesterol levels in the bloodstream of some individuals.
(E) Only regular exercise is necessary to decrease cholesterol levels in the bloodstream of individuals of average weight.

Answer 3

Increases in the level of high-density lipoprotein (HDL) in the human bloodstream lower bloodstream cholesterol levels by increasing the body's capacity to rid itself of excess cholesterol. Levels of HDL in the bloodstream of some individuals are significantly increased by a program of regular exercise and weight reduction.

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(E) Only regular exercise is necessary to decrease cholesterol levels in the bloodstream of individuals of average weight.

Argument Construction
Situation
Higher HDL levels in the bloodstream reduce cholesterol. Regular exercise and weight reduction promote higher HDL levels in some people.

Reasoning
What inference is supported by this information? The first statement is a general one, applying to all people. The second one applies only to some people. The resulting inference can be made only about some people, not everyone. Since some people achieve higher HDL levels through a program of regular exercise and weight reduction, these individuals will have lower cholesterol levels.

A. The passage draws no comparison between being underweight and having lower cholesterol levels.
B. The passage does not discuss lack of regular exercise as a risk factor for the development of high bloodstream cholesterol late in life.

C. Other possible methods of lowering cholesterol levels are not discussed, and so a program of exercise and weight reduction cannot be inferred to be the best method. Moreover, a general inference applying to all humans cannot be made on the basis of some individuals.
D. **Correct.** This statement properly identifies the inference that, since a program of exercise and weight reduction raises HDL for *some* people, that program should lower cholesterol for *some* people.
E. The passage explicitly states that the two elements of regular exercise and weight reduction together contribute to *some* individuals' ability to increase their HDL levels. It cannot be inferred that all individuals of average weight can lower their cholesterol with regular exercise alone.

The correct answer is D.

Q 4
Answer 4
Answer Explanation
Let x be the number of grams of food X in the mixture. Then the number of grams of food Y in the mixture can be expressed as $300 - x$. Since the sum of protein from X and Y is 38 grams, the given information about protein content can be expressed in the following equation, which can then be solved for x.

$$0.10x + 0.15(300 - x) = 38$$
$$0.10x + 45 - 0.15x = 38$$
$$-0.05x = -7$$
$$x = 140$$

The correct answer is B.

Q 5
Unlike a typical automobile loan, which requires a fifteen- to twenty-percent down payment, the lease-loan buyer is not required to make an initial deposit on the new vehicle.

(A) the lease-loan buyer is not required to make
(B) with lease-loan buying there is no requirement of
(C) lease-loan buyers are not required to make
(D) for the lease-loan buyer there is no requirement of
(E) a lease-loan does not require the buyer to make

Logical predication; parallelism
A comparison or contrast evaluates two parallel elements. The point of this sentence is to contrast two kinds of loans, but the sentence has been written so that a typical automobile loan is contrasted with the lease-loan buyer. The correct contrast is between a typical automobile loan

and a lease-loan. This change makes the two verbs active voice (requires... does not require) and parallel.

A. Loan is incorrectly contrasted with lease-loan buyer.
B. Loan is contrasted with lease-loan buying instead of lease-loan; prepositional phrase (with...) begins an awkward and wordy construction.
C. Loan is contrasted with lease-loan buyers instead of lease-loan.
D. Loan is contrasted with lease-loan buyer instead of lease-loan; prepositional phrase (for...) begins an awkward and wordy construction.
E. **Correct.** In this sentence, loan is properly contrasted with lease-loan, and, in place of the passive voice *is required*, the active voice *does... require* parallels *requires*.

The correct answer is E.

Q 6

If $(2^x)(2^y) = 8$ and $(9^x)(3^y) = 81$, then $(x, y) =$

○ (1, 2)
○ (2, 1)
○ (1, 1)
○ (2, 2)
○ (1, 3)

Answer 6
Answer Explanation
Simplify both equations, and solve for x and y as shown.

- $(2^x)(2^y) = 8$
- $2^{x+y} = 2^3$
- Get both sides to a single term with the same base.
- $x + y = 3$
- Since the bases are now the same, set exponents equal.
- $y = 3 - x$
- Solve for y.
- $(9^x)(3^y) = 81$
- Get both sides to a single term with the same base.
- $(3^{2x})(3^y) = 81$
- $(3^{2x})(3^y) = 3^4$
- Since the bases are now the same, set exponents equal.

- $3^{2x+y} = 3^4$
- $2x + y = 4$

$2x + 3 - x = 4$ Substitute $3 - x$ for y in this equation, and solve for x.

$$x + 3 = 4$$
$$x = 1$$

$y = 3 - 1$ Substitute 1 for x in the first equation, and solve for y.

$$y = 2$$

The correct answer is A.

Q 7

Consumer advocate: It is generally true, at least in this state, that lawyers who advertise a specific service charge less for that service than lawyers who do not advertise. It is also true that each time restrictions on the advertising of legal services have been eliminated, the number of lawyers advertising their services has increased and legal costs to consumers have declined in consequence. However, eliminating the state requirement that legal advertisements must specify fees for specific services would almost certainly increase rather than further reduce consumers' legal costs. Lawyers would no longer have an incentive to lower their fees when they begin advertising and if no longer required to specify fee arrangements, many lawyers who now advertise would increase their fees.

In the consumer advocate's argument, the two portions in boldface play which of the following roles?

○ The first is a generalization that the consumer advocate accepts as true; the second is presented as a consequence that follows from the truth of that generalization.
○ The first is a pattern of cause and effect that the consumer advocate argues will be repeated in the case at issue; the second acknowledges a circumstance in which that pattern would not hold.
○ The first is a pattern of cause and effect that the consumer advocate predicts will not hold in the case at issue; the second offers a consideration in support of that prediction.
○ The first is evidence that the consumer advocate offers in support of a certain prediction; the second is that prediction.
○ The first acknowledges a consideration that weighs against the main position that the consumer advocate defends; the second is that position.

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(D) The first is evidence that the consumer advocate offers in support of a certain prediction; the second is that prediction.
(E) The first acknowledges a consideration that weighs against the main position that the consumer advocate defends; the second is that position.

Argument Construction
Situation
Lawyers who advertise charge less. In the past, when advertising restrictions have been removed, the number of lawyers advertising rose and legal costs to consumers fell. However, eliminating the requirement to specify fees in advertisements would raise consumers' legal costs. If lawyers are not required to specify their fees in ads, many lawyers who advertise will raise their fees, and consumer costs are likely to rise.

Reasoning
What part do the two sentences in boldface play in the argument? This question asks the reader to look carefully at how the advocate's argument is constructed and in particular at how the two sentences in boldface are related. It is necessary to understand the consumer advocate's main point: if lawyers are not required to specify fees in advertisements, consumers' legal costs are likely to rise. The first boldface sentence shows the cause-and-effect relation of lawyers' ads and falling consumer costs, a relation the advocate predicts will not continue in the current case. The second boldface sentence explains why that relation will change.

A. The first sentence is presented as true, but the second sentence does not follow as a consequence; rather, it contradicts the first sentence.
B. The first sentence shows cause and effect, but the consumer advocate does not argue that it will be repeated. The advocate argues that it will not be repeated.
C. **Correct.** The first sentence shows general cause and effect in a situation that the advocate argues will not be true in this particular case. The second sentence explains why it will not be true.
D. The consumer advocate predicts legal costs will rise; the first sentence does not offer evidence in support of that prediction, but rather evidence that costs have always fallen.
E. The first sentence gives a general cause-and-effect relationship, not a special consideration; the second sentence shows how that relationship could change.

The correct answer is C.

Q 8
Visitors to the park have often looked up into the leafy canopy and saw monkeys sleeping on the branches, whose arms and legs hang like socks on a clothesline.

(A) saw monkeys sleeping on the branches, whose arms and legs hang
(B) saw monkeys sleeping on the branches, whose arms and legs were hanging
(C) saw monkeys sleeping on the branches, with arms and legs hanging
(D) seen monkeys sleeping on the branches, with arms and legs hanging
(E) seen monkeys sleeping on the branches, whose arms and legs have hung

Verb form; logical predication
The subject of the main clause is *visitors*, which should be followed by two verbs using the same tense: *have looked* and *have seen*. *Have* does not need to be repeated in the second verb; it is entirely correct simply to let it be understood. The modifying clause *whose arms and legs* illogically refers to *branches*, which immediately precedes it, rather than to *monkeys*. Replacing the clause with the phrase *with arms and legs hanging* corrects this error.

A. *Saw* is the wrong verb tense; the clause incorrectly modifies *branches*.
B. *Saw* is the wrong verb tense; the clause does not modify *monkeys*.
C. *Saw* is the wrong verb tense.
D. **Correct.** The verb tense is correct in this sentence, and the phrase correctly modifies *monkeys*.
E. The clause modifies *branches* rather than *monkeys*; *have hung* is the wrong tense.

The correct answer is D.

On the number line above, the segment from 0 to 1 has been divided into fifths, as indicated by the large tick marks, and also into sevenths, as indicated by the small tick marks. What is the least possible distance between any two of the tick marks?

○ $\frac{1}{70}$
○ $\frac{1}{35}$
○ $\frac{3}{35}$
○ $\frac{12}{35}$
○ $\frac{1}{7}$

Answer 9
Answer Explanation
The small tick marks are placed at $\frac{1}{7}$, $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{5}{7}$, and $\frac{6}{7}$, and the large tick marks are at $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, and $\frac{4}{5}$. The least common denominator is 35, so the tick marks in ascending order are placed at $\frac{5}{35}$, $\frac{7}{35}$, $\frac{10}{35}$, $\frac{14}{35}$, $\frac{15}{35}$, $\frac{20}{35}$, $\frac{21}{35}$, $\frac{25}{35}$, $\frac{28}{35}$, and $\frac{30}{35}$. The least distance between tick marks on this number line is $\frac{1}{35}$.

The correct answer is B.

Q 10
The golden crab of the Gulf of Mexico has not been fished commercially in great numbers, primarily on account of living at great depths—2,500 to 3,000 feet down.

(A) on account of living
(B) on account of their living
(C) because it lives
(D) because of living
(E) being they live

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Diction
The second part of the sentence explains the first: the crab is not fished *because* it lives at great depths. The clearest and most direct way of showing the relationship between the two parts of the sentence is to use *because* to introduce a subordinate clause.

A. *On account of living* is awkward and wordy.
B. *On account of* is awkward and wordy; *their* does not agree with *crab*.
C. **Correct.** Using *because* to introduce a subordinate clause is the best way to show the effect-cause relation of the two parts of this sentence.
D. *Because of living* is not the correct idiom.
E. *Being* is neither logical nor idiomatic; *they* does not agree with *crab*.

The correct sentence is C.

Q 11
If $y = 4 + (x - 3)^2$, then y is least when $x =$

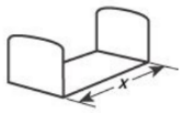
○ 14
○ 13
○ 0
○ 3
○ 4

Answer 11
Answer Explanation
The value of y is least when $(x - 3)^2$ is least, and that is when $(x - 3)^2 = 0$. Solving this equation for x yields:

$$(x-3)^2 = 0$$
$$x - 3 = 0$$
$$x = 3$$

The correct answer is D.

Q 12



Will the first 10 volumes of a 20-volume encyclopedia fit upright in the bookrack shown above?

(1) $x = 50$ centimeters
(2) Twelve of the volumes have an average (arithmetic mean) thickness of 5 centimeters.

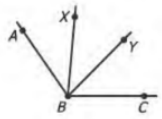
○ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
○ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
○ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
○ EACH statement ALONE is sufficient.
○ Statements (1) and (2) TOGETHER are NOT sufficient.

Answer 12
Answer Explanation
(1) This establishes the length of the bookrack but does not give any information about the thickness of the volumes; NOT sufficient.
(2) This establishes the average thickness of 12 of the volumes, but does not give any information about the average thickness of the first 10 volumes; NOT sufficient.

By the same reasoning used in (2), (1) and (2) taken together are not sufficient to answer the question.

The correct answer is E; both statements together are still not sufficient.

Q 13



In the figure above, what is the measure of ∠ABC?

(1) BX bisects ∠ABY and BY bisects ∠XBC.
(2) The measure of ∠ABX is 40°.

○ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
○ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
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Answer 13
Answer Explanation
(1) From this, it can be determined that ∠ABX = ∠XBY, and ∠XBY = ∠YBC so that all three angles are equal in measure. The measure of ∠ABC cannot be determined without information on the measure of any one of the three equal angles; NOT sufficient.
(2) Part of the measure of ∠ABC is given, but there is no information about the measure of ∠XBC; NOT sufficient.

From (1) and (2) together, it can be determined that the measure of ∠ABX = the measure of ∠XBY = the measure of ∠YBC = 40°, so ∠ABC measures 3(40) = 120 degrees.

The correct answer is C; both statements together are sufficient.

Q 14
Manufacturers of mechanical pencils make most of their profit on pencil leads rather than on the pencils themselves. The Write Company, which cannot sell its leads as cheaply as other manufacturers can, plans to alter the design of its mechanical pencil so that it will accept only a newly designed Write Company lead, which will be sold at the same price as the Write Company's current lead.

Which of the following, if true, most strongly supports the Write Company's projection that its plan will lead to an increase in its sales of pencil leads?

(A) First-time buyers of mechanical pencils tend to buy the least expensive mechanical pencils available.
(B) Annual sales of mechanical pencils are expected to triple over the next five years.
(C) A Write Company executive is studying ways to reduce the cost of manufacturing pencil leads.
(D) A rival manufacturer recently announced similar plans to introduce a mechanical pencil that would accept only the leads produced by that manufacturer.
(E) In extensive test marketing, mechanical-pencil users found the new Write Company pencil markedly superior to other mechanical pencils they had used.

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(E) In extensive test marketing, mechanical-pencil users found the new Write Company pencil markedly superior to other mechanical pencils they had used.

Evaluation of a Plan
Situation
A manufacturer of mechanical pencils plans to produce a new pencil that accepts only the redesigned pencil leads that the company also intends to make and sell. Despite the fact that its leads are sold for a higher price than competitors' leads, the company anticipates that this approach will generate increased lead sales.

Reasoning
What point supports the plan's success? It is clear that increased lead sales are directly tied to the sales and ongoing use of the new pencil that can use only that type of lead. If the new pencils sell well and then get used frequently, the buyers will need to purchase leads regularly. If thorough test marketing has shown that potential buyers find the new pencil greatly superior to use, then the pencil buyers will have to purchase the only available leads that fit their pencils, no matter whether the leads are more expensive, and the projection that sales of these pencil leads will increase is strengthened.

A. It is not known whether the Write Company's pencil is the least expensive, nor are the lead-buying habits of first-time buyers known. This information thus does not strengthen the projection.
B. This expectation applies for all manufacturers and does not show that the Write Company's plan will cause increased sales of its pencil leads.
C. Reducing the cost of manufacturing the leads could lead to greater profits but not to greater sales, since the passage states that the price will remain the same.
D. A rival manufacturer's announcement to follow the same plan does not affect whether the plan will be successful for the Write Company.
E. **Correct.** This statement properly identifies a point that supports the plan's success.

The correct answer is E.

Q 15
Does the integer k have a factor ρ such that $1 < \rho < k$?

(1) $k > 4!$
(2) $13! + 2 \leq k \leq 13! + 13$

○ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
○ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
○ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.

○ EACH statement ALONE is sufficient.
○ Statements (1) and (2) TOGETHER are NOT sufficient.

Answer 15
Answer Explanation
Note that, if n is any integer greater than 1, then $n!$ (that is, "n factorial") is defined as the product of all the integers from 1 to n, that is, (1)(2)(3)(4)...(n). Also note that k will have a factor ρ between 1 and k if and only if k is NOT a prime number.

(1) Since $k > 4!$, then $k > 24$, because $4! = (1)(2)(3)(4) = 24$. However, k may or may not be a prime number. For example, if $k = 27$, then the factor ρ could be 3 or 9, but if $k = 29$, which is a prime number, then k would not have any factors between 1 and 29; NOT sufficient.
(2) From this, it can be concluded that k could be any of twelve integers: $13! + 2, 13! + 3, 13! + 4$ ... $13! + 13$, where 13! is the product of the integers from 1 to 13. Note that 2 is a factor of $13! + 2$, since it is a factor of both 13! and 2. Similarly, 3 is a factor of $13! + 3$; 4 is a factor of $13! + 4$; and so on for all the values of k. Thus, for each number k from $13! + 2$ to $13! + 13$, there is a factor ρ such that $1 < \rho < k$; SUFFICIENT.

The correct answer is B; statement 2 alone is sufficient.