GMAT 2025 Practice Paper Set 2 Question Paper with Solutions

Time Allowed :2 Hours 15 Minutes	**Maximum Marks :**205-805	**Total Questions :**64

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The GMAT exam is 2 hours and 15 minutes long (with one optional 10-minute break) and consists of 64 questions in total.
2. The GMAT exam is comprised of three sections:
3. Quantitative Reasoning: 21 questions, 45 minutes
4. Verbal Reasoning: 23 questions, 45 minutes
5. Data Insights: 20 questions, 45 minutes
6. You can answer the three sections in any order. As you move through a section, you can bookmark questions that you would like to review later.
7. When you have answered all questions in a section, you will proceed to the Question Review & Edit screen for that section.
8. If there is no time remaining in the section, you will NOT proceed to the Question Review & Edit screen and you will automatically be moved to your optional break screen or the next section (if you have already taken your optional break).
9. Each Question Review & Edit screen includes a numbered list of the questions in that section and indicates the questions you bookmarked.
10. Clicking a question number will take you to that specific question. You can review as many questions as you would like and can edit up to three (3) answers.

Quantitative Aptitude

1. 12 is 15 percent of what number?

(A) 1.8
(B) 8
(C) 19.5
(D) 80
(E) 180

Correct Answer: (D) 80

Solution:

Step 1: Understanding the Concept:
This problem requires translating a sentence into a mathematical equation. The key is to understand what "is" and "of" represent in a mathematical context.

Step 2: Key Formula or Approach:
Let the unknown number be x. The sentence "12 is 15 percent of what number?" can be translated as:

$$12 = 15\% \times x$$

We need to solve this equation for x.

Step 3: Detailed Explanation:
First, convert the percentage to a decimal or a fraction.

$$15\% = \frac{15}{100} = 0.15$$

Now substitute this back into the equation:

$$12 = 0.15 \times x$$

To isolate x, divide both sides by 0.15:

$$x = \frac{12}{0.15}$$

To simplify the division, we can multiply the numerator and denominator by 100 to remove the decimal:

$$x = \frac{12 \times 100}{0.15 \times 100} = \frac{1200}{15}$$

Now, perform the division:

$$x = 80$$

Step 4: Final Answer:
Therefore, 12 is 15 percent of 80. This corresponds to option (D).

Quick Tip

A quick way to remember how to set up percentage problems: the word "is" usually translates to an equals sign (=), and the word "of" usually translates to multiplication (×).

---

2. If 3/4 of x is 9, what is the value of x?

(A) 4
(B) 6 3/4

(C) 12
(D) 12 1/4
(E) 13 1/3

Correct Answer: (C) 12

Solution:

Step 1: Understanding the Concept:
This problem involves setting up and solving a linear equation with a fraction. The phrase "3/4 of x" means we need to multiply 3/4 by x.

Step 2: Key Formula or Approach:
The statement can be written as the following equation:

$$\frac{3}{4} \times x = 9$$

Our goal is to isolate the variable x.

Step 3: Detailed Explanation:
To solve for x, we need to undo the multiplication by 3/4. We can do this by multiplying both sides of the equation by the reciprocal of 3/4, which is 4/3.

$$\left(\frac{4}{3}\right) \times \frac{3}{4}x = 9 \times \left(\frac{4}{3}\right)$$

The fractions on the left side cancel out:

$$x = \frac{9 \times 4}{3}$$
$$x = \frac{36}{3}$$
$$x = 12$$

Step 4: Final Answer:
The value of x is 12. This corresponds to option (C).

Quick Tip

To solve an equation of the form $(\frac{a}{b})x = c$, you can always find x by multiplying the other side by the reciprocal: $x = c \times \frac{b}{a}$.

---

3. $\sqrt{100} - \sqrt{36} =$

(A) 4
(B) 8
(C) 16

(D) 64
(E) 256

Correct Answer: (A) 4

Solution:

Step 1: Understanding the Concept:
This problem involves finding the principal square roots of two numbers and then performing subtraction.

Step 2: Detailed Explanation:
First, we evaluate each square root individually.
The principal square root of 100 is the number that, when multiplied by itself, equals 100.

$$\sqrt{100} = 10 \quad (\text{since } 10 \times 10 = 100)$$

The principal square root of 36 is the number that, when multiplied by itself, equals 36.

$$\sqrt{36} = 6 \quad (\text{since } 6 \times 6 = 36)$$

Now, we perform the subtraction:

$$\sqrt{100} - \sqrt{36} = 10 - 6 = 4$$

Step 3: Final Answer:
The result of the expression is 4. This corresponds to option (A).

Quick Tip

A common mistake is to subtract the numbers inside the square roots first: $\sqrt{100 - 36} = \sqrt{64} = 8$. This is incorrect. Remember that $\sqrt{a} - \sqrt{b} \neq \sqrt{a - b}$. You must evaluate each square root separately before performing addition or subtraction.

---

4. 25 percent of 25 percent of x is equal to 25. What is the value of x?

(A) 6.25
(B) 25
(C) 100
(D) 400
(E) 625

Correct Answer: (D) 400

Solution:

Step 1: Understanding the Concept:
This problem involves nested percentages. We need to translate the sentence into a single algebraic equation and solve for the unknown variable x.

Step 2: Key Formula or Approach:
Translate the sentence into an equation. It's often easier to work with fractions or decimals instead of percentages.
25 percent $= \frac{25}{100} = \frac{1}{4}$ or 0.25.
The equation becomes:

$$\frac{1}{4} \times \left(\frac{1}{4} \times x \right) = 25$$

Step 3: Detailed Explanation:
Using the fractional form:

$$\frac{1}{4} \times \frac{1}{4} \times x = 25$$

Multiply the fractions on the left side:

$$\frac{1}{16} x = 25$$

To solve for x, multiply both sides by 16:

$$x = 25 \times 16$$

$$x = 400$$

Alternatively, using decimals:

$$0.25 \times (0.25 \times x) = 25$$

$$0.0625x = 25$$

$$x = \frac{25}{0.0625} = \frac{25}{1/16} = 25 \times 16 = 400$$

Step 4: Final Answer:
The value of x is 400. This corresponds to option (D).

Quick Tip

Converting common percentages like 25%, 50%, and 75% to their simpler fractional equivalents (1/4, 1/2, 3/4) can make calculations significantly faster and less prone to error.

---

5. What is 3/16 expressed as a decimal?

(A) 0.16
(B) 0.1875

(C) 0.192
(D) 0.214
(E) 0.316

Correct Answer: (B) 0.1875

Solution:

Step 1: Understanding the Concept:
To convert a fraction to a decimal, you divide the numerator by the denominator.

Step 2: Key Formula or Approach:
We need to perform the division: $3 \div 16$.

Step 3: Detailed Explanation:
We can use long division to find the decimal value.

$$
\begin{array}{r}
0.1875 \\
16\overline{)3.0000} \\
-0\downarrow \\
\hline
30 \\
-16\downarrow \\
\hline
140 \\
-128\downarrow \\
\hline
120 \\
-112\downarrow \\
\hline
80 \\
-80 \\
\hline
0
\end{array}
$$

The division gives us 0.1875.

Step 4: Final Answer:
The decimal equivalent of 3/16 is 0.1875. This corresponds to option (B).

Quick Tip

Another way to convert some fractions is to find an equivalent fraction with a denominator that is a power of 10. Since $16 = 2^4$, we can multiply the numerator and denominator by $5^4 = 625$ to get a denominator of $10^4 = 10000$.

$$\frac{3}{16} = \frac{3 \times 625}{16 \times 625} = \frac{1875}{10000} = 0.1875$$

---

6. If $a = -2$ and $b = 5$, then $a^2 + b^2 =$

(A) -29
(B) -21
(C) 3
(D) 21
(E) 29

Correct Answer: (E) 29

Solution:

Step 1: Understanding the Concept:
This problem requires substituting given values for variables into an algebraic expression and then evaluating it using the correct order of operations.

Step 2: Key Formula or Approach:
Substitute $a = -2$ and $b = 5$ into the expression $a^2 + b^2$.

Step 3: Detailed Explanation:
The expression is $a^2 + b^2$.
Substitute the given values:

$$(-2)^2 + (5)^2$$

First, evaluate the exponents. It is crucial to use parentheses when squaring the negative number.

$$(-2)^2 = (-2) \times (-2) = 4$$
$$(5)^2 = 5 \times 5 = 25$$

Now, add the results:

$$4 + 25 = 29$$

Step 4: Final Answer:
The value of the expression is 29. This corresponds to option (E).

Quick Tip

Be extremely careful when squaring negative numbers. Always enclose the negative number in parentheses. $(-2)^2 = 4$, but $-2^2 = -4$. The parentheses make all the difference.

---

7. If $5x = 3x + 8$, then $x =$

(A) -4
(B) -1 1/3

(C) 1 1/3
(D) 4
(E) 12

Correct Answer: (D) 4

Solution:

Step 1: Understanding the Concept:
This is a linear equation where the variable x appears on both sides. The goal is to isolate x to find its value.

Step 2: Key Formula or Approach:
The strategy is to gather all terms containing x on one side of the equation and all constant terms on the other side.

Step 3: Detailed Explanation:
The given equation is:

$$5x = 3x + 8$$

Subtract $3x$ from both sides to collect the x terms on the left side:

$$5x - 3x = 8$$

Combine the like terms:

$$2x = 8$$

Now, divide both sides by 2 to solve for x:

$$x = \frac{8}{2}$$
$$x = 4$$

Step 4: Final Answer:
The value of x is 4. This corresponds to option (D).

Quick Tip

When solving a linear equation, you can check your answer by substituting the value you found back into the original equation. For $x = 4$:
Left side: $5(4) = 20$.
Right side: $3(4) + 8 = 12 + 8 = 20$.
Since both sides are equal, the answer is correct.

Verbal Reasoning

Passage 1:
In recent years, scholars have begun to use social science tools to analyze court opinions. These scholars have justifiably criticized traditional legal research for its focus on a few cases chosen for their perceived doctrinal importance, arguing that such research may distort our understanding of the law. Social scientists endeavor to study court opinions systematically, analyzing samples of cases that are selected randomly or that constitute the entire universe of cases within certain bounds. However, social science approaches themselves have limitations. By focusing primarily on the influence of factors such as the identity of the judge or the ideological orientation of the court, social scientists may overlook the influence of legal doctrine itself. Their research designs, which usually involve analyzing the quantitative relationship between characteristics of cases and their outcomes, are good at detecting the influence of factors that can be easily quantified but not as good at assessing the influence of factors such as the reasoning of the judge. Social science approaches have also been criticized for ignoring the distinction between the holding of a case (the part of the opinion that is legally binding) and the dicta (nonbinding statements). Finally, these approaches are better suited to analyzing the decisions of appellate courts, which generally issue written opinions, than the decisions of trial courts, which often do not.

---

1. The primary purpose of the passage is to

(A) describe a new approach to analyzing court opinions and discuss some criticisms of this approach
(B) argue that traditional legal research is superior to social science approaches to analyzing court opinions
(C) explain the limitations of using quantitative methods to analyze court opinions
(D) compare the goals of traditional legal research with those of social science approaches to analyzing court opinions
(E) advocate the use of social science tools in the analysis of trial court decisions

Correct Answer: (A) describe a new approach to analyzing court opinions and discuss some criticisms of this approach

Solution:

Step 1: Understanding the Concept:
This question asks for the primary purpose of the passage. We need to analyze the overall structure and content to determine the author's main goal.

Step 2: Detailed Explanation:
The passage begins by introducing a "new" method: using social science tools to analyze court opinions.
It then briefly explains the benefits of this approach over traditional legal research.
The majority of the passage, however, is dedicated to outlining the "limitations" and "criticisms" of this new social science approach (e.g., overlooking legal doctrine, ignoring holding/dicta distinction, unsuitability for trial courts).

Therefore, the passage describes the new approach and then discusses its criticisms.
Let's evaluate the options:
(A) This option perfectly matches our analysis. It mentions both the description of the new approach and the discussion of its criticisms.
(B) The passage does not argue that the traditional method is superior; it points out flaws in both.
(C) This is too narrow. The passage discusses several limitations, not just those of quantitative methods.
(D) While some comparison is made, the primary focus is on the new approach and its flaws, not a balanced comparison of goals.
(E) This is the opposite of what the passage states. It says these approaches are *not* well-suited for trial courts.

Step 3: Final Answer:
The primary purpose is to describe the social science approach to analyzing court opinions and to detail its limitations. This corresponds to option (A).

Quick Tip

To find the primary purpose, look at the overall structure. Often, a passage will introduce a topic, explain its context or benefits, and then provide a critique or analysis. The main purpose is to present this complete picture.

---

2. The passage suggests which of the following about traditional legal research?

(A) It focuses primarily on the decisions of appellate courts.
(B) It is not well suited to analyzing the influence of legal doctrine.
(C) It may not accurately reflect the state of the law.
(D) It is more likely than social science approaches to distinguish between holding and dicta.
(E) It is less biased than social science approaches with regard to the selection of cases.

Correct Answer: (C) It may not accurately reflect the state of the law.

Solution:

Step 1: Understanding the Concept:
This is an inference question. We need to find the statement about traditional legal research that is most strongly supported by the text.

Step 2: Detailed Explanation:
The passage criticizes traditional legal research for its "focus on a few cases chosen for their perceived doctrinal importance." It then argues that this selective focus "may distort our understanding of the law."
Let's evaluate the options based on this information:
(A) The passage doesn't specify which courts traditional research focuses on.

(B) The passage implies the opposite; traditional research is focused on "doctrinal importance."
(C) This is a direct paraphrase of the idea that this research method "may distort our understanding of the law." If the understanding is distorted, it is not accurately reflecting the state of the law. This is a strong inference.
(D) The passage criticizes the social science approach for ignoring this distinction but makes no such claim about the traditional approach. We cannot infer that the traditional approach is better at it.
(E) The passage states the opposite. It criticizes the traditional approach for its biased selection of cases ("a few cases chosen for their perceived doctrinal importance") and praises the social science approach for being more systematic ("selected randomly or that constitute the entire universe").

Step 3: Final Answer:
The passage directly suggests that the biased case selection of traditional research can lead to a distorted view, meaning it may not accurately reflect the law. This corresponds to option (C).

Quick Tip

For questions that ask what a passage "suggests," look for direct criticisms or praises of the subject in question. The correct answer is often a logical rewording of one of these specific points.

---

3. According to the passage, social science approaches to analyzing court opinions have been criticized for which of the following?

(A) Focusing too much on the identity of the judge
(B) Failing to account for the influence of legal doctrine
(C) Focusing too much on the decisions of trial courts
(D) Analyzing too few cases
(E) Giving too much weight to the reasoning of the judge

Correct Answer: (B) Failing to account for the influence of legal doctrine

Solution:

Step 1: Understanding the Concept:
This is a detail question. We need to find a specific criticism of social science approaches that is explicitly mentioned in the passage.

Step 2: Detailed Explanation:
The passage lists several limitations of social science approaches. Let's find the sentence that addresses the options. The passage states: "By focusing primarily on the influence of factors such as the identity of the judge or the ideological orientation of the court, social scientists **may overlook the influence of legal doctrine itself**."
Let's evaluate the options:

(A) The passage says this approach *does* focus on the identity of the judge, but this is presented as a feature that leads to a flaw, not the criticism itself. The criticism is what this focus causes them to miss.
(B) This is a direct paraphrase of the criticism mentioned in the passage ("may overlook the influence of legal doctrine").
(C) The passage states the opposite: these approaches are "better suited to analyzing the decisions of appellate courts" and are not well-suited for trial courts.
(D) The passage states the opposite: social scientists analyze cases "systematically, analyzing samples of cases that are selected randomly or that constitute the entire universe," which contrasts with the "few cases" of traditional research.
(E) The passage states the opposite: these approaches are "not as good at assessing the influence of factors such as the reasoning of the judge."

Step 3: Final Answer:
The passage explicitly states that social science approaches have been criticized for overlooking or failing to account for the influence of legal doctrine. This corresponds to option (B).

Quick Tip

When a question asks "According to the passage," you should be able to physically point to the sentence or phrase in the text that directly states the information. The correct answer is often a close paraphrase of that text.

Passage 2:
In the field of Native American history, scholars have increasingly recognized the need to understand indigenous cultures and perspectives. However, achieving this goal is difficult, partly because Native American oral traditions are rarely accorded the same legitimacy as written accounts. Historian Joanne Rappaport observes that written sources are privileged in historical scholarship, and she argues that this privileging reflects a view that literacy is superior to orality. Rappaport suggests that the link between writing and truth is historically contingent, arising from the encounter between Native Americans and Spanish colonizers. She points out that while the Spanish privileged written documents as records of events, the Native Americans of the Andes regarded oral traditions and ritual performances as the principal means of recording the past. When Andean societies were forced to adopt alphabetic writing, they adapted it to meet their needs. For example, indigenous authors used alphabetic writing not only to record events but also to express Andean understandings of the cosmos. Moreover, Andean communities continued to rely on oral traditions and ritual performances to transmit historical knowledge. Rappaport argues that scholars should recognize the parity of oral and written modes of transmitting knowledge and strive to incorporate both into their historical accounts.

---

4. The primary purpose of the passage is to

(A) describe the methods used by Native American societies to record the past
(B) discuss the difficulty of incorporating Native American perspectives into historical scholar-

ship
(C) evaluate the relative merits of oral and written sources in Native American history
(D) argue for the importance of according greater legitimacy to Native American oral traditions
(E) explain the historical origins of the view that literacy is superior to orality

Correct Answer: (B) discuss the difficulty of incorporating Native American perspectives into historical scholarship

Solution:

Step 1: Understanding the Concept:
This is a primary purpose question. We need to identify the central theme that organizes the entire passage.

Step 2: Detailed Explanation:
The passage begins by stating a goal ("understand indigenous cultures and perspectives") and immediately introduces a problem ("achieving this goal is difficult"). The reason for this difficulty is the main subject: the academic bias that favors written accounts over oral traditions. The passage then uses Rappaport's work to explore this difficulty and her proposed solutions.
Let's evaluate the options:
(A) This is too narrow. The passage discusses methods of recording the past, but only as part of a larger argument about a bias in scholarship.
(B) This option accurately captures the overarching theme. The passage is framed around the "difficulty" of incorporating indigenous perspectives, and it explores the reasons for this difficulty and potential solutions.
(C) The passage does not evaluate the relative merits in a neutral way; it argues against the current unequal evaluation.
(D) This is Rappaport's specific argument, which is a major component of the passage, but the overall purpose is broader. The passage uses her argument to illustrate the central problem.
(E) This is a supporting detail used by Rappaport to explain the bias, not the main purpose of the entire passage.

Step 3: Final Answer:
The passage is structured as a discussion of a central problem in the field of Native American history. This corresponds to option (B).

Quick Tip

Look at the first and last sentences of a passage for clues about its primary purpose. The first sentence often introduces the main topic or problem, and the last sentence often summarizes the author's main point or call to action.

---

5. According to the passage, Rappaport argues that the privileging of written sources in historical scholarship reflects which of the following?

(A) A bias on the part of historians against Native American cultures
(B) A belief that oral traditions are not as reliable as written accounts
(C) A tendency to favor the perspectives of colonizers over those of the colonized
(D) A view that literacy is superior to orality
(E) A lack of awareness of Native American oral traditions

Correct Answer: (D) A view that literacy is superior to orality

Solution:

Step 1: Understanding the Concept:
This is a detail question that asks for the specific reason Rappaport gives for a particular phenomenon. We need to find the exact statement in the passage.

Step 2: Detailed Explanation:
The passage states: "Historian Joanne Rappaport observes that written sources are privileged in historical scholarship, and **she argues that this privileging reflects a view that literacy is superior to orality**." This sentence directly answers the question.
Let's check the options:
(A), (B), and (C) are all related ideas that might be true, but they are not the specific reason Rappaport gives in this sentence.
(D) This is a direct paraphrase of the text.
(E) The passage suggests the problem is a lack of legitimacy accorded to oral traditions, not a total lack of awareness.

Step 3: Final Answer:
The passage explicitly states that Rappaport connects the privileging of written sources to the view that literacy is superior to orality. This corresponds to option (D).

Quick Tip

For questions asking about a specific person's argument within a passage, locate that person's name and carefully read the sentences where their ideas are presented. The answer is almost always a direct paraphrase of what the text says they "argue," "observe," "claim," or "suggest."

---

6. The passage suggests which of the following about the Andean societies discussed in the passage?

(A) They were forced by the Spanish colonizers to abandon their oral traditions.
(B) They did not regard written documents as legitimate records of events.
(C) They used alphabetic writing to record information other than historical events.
(D) They were the first Native American societies to adopt alphabetic writing.
(E) They had a more accurate understanding of their past than did the Spanish colonizers.

Correct Answer: (C) They used alphabetic writing to record information other than historical events.

Solution:

Step 1: Understanding the Concept:
This is an inference question focused on a specific group mentioned in the passage, the Andean societies. We need to find the statement that can be logically concluded from the text.

Step 2: Detailed Explanation:
The passage states: "When Andean societies were forced to adopt alphabetic writing, they adapted it to meet their needs. For example, indigenous authors used alphabetic writing not only to record events but also **to express Andean understandings of the cosmos**."
Let's evaluate the options:
(A) This is contradicted by the passage, which says they "continued to rely on oral traditions."
(B) The passage says the Spanish privileged written documents, and the Andeans adapted writing for their own use. It doesn't say they viewed writing as illegitimate, only that they also valued oral traditions.
(C) This is directly supported by the text. "Understandings of the cosmos" is information other than historical events.
(D) The passage does not make this claim; we cannot infer it.
(E) The passage discusses their different methods of recording the past but does not make a judgment about which was more "accurate."

Step 3: Final Answer:
The passage provides a direct example of Andean societies using writing for non-historical purposes. This corresponds to option (C).

Quick Tip

When a passage provides an example using "For example" or "For instance," pay close attention. This detail is often the basis for a specific inference question.

---

7. It can be inferred from the passage that Rappaport would be most likely to agree with which of the following statements?

(A) Scholars should prioritize oral sources over written sources when studying Native American history.
(B) The adoption of alphabetic writing by Andean societies represents a break from their pre-Columbian past.
(C) The distinction between oral and written modes of transmitting knowledge is less important than the distinction between reliable and unreliable sources.
(D) Historical accounts that rely solely on written sources may fail to capture the full complexity of Native American history.

(E) The Spanish colonizers were unaware of the importance that Andean societies placed on oral traditions.

Correct Answer: (D) Historical accounts that rely solely on written sources may fail to capture the full complexity of Native American history.

Solution:

Step 1: Understanding the Concept:
This question asks us to infer the viewpoint of Joanne Rappaport based on the summary of her arguments in the passage. We need to find a statement that aligns with her overall perspective.

Step 2: Detailed Explanation:
Rappaport's central argument is that scholars should "recognize the **parity** of oral and written modes" and "strive to **incorporate both**" into their accounts. This implies that using only one mode (especially the traditionally privileged written mode) would result in an incomplete or flawed account.
Let's evaluate the options based on this core argument:
(A) Rappaport argues for "parity" (equality), not prioritizing oral sources over written ones. This contradicts her view.
(B) The passage suggests continuity, not a break. It says Andean societies "adapted" writing to their needs and "continued to rely on oral traditions."
(C) The passage focuses on the distinction between oral and written modes, not reliability. We cannot infer Rappaport's view on this comparison.
(D) This is the logical consequence of Rappaport's argument. If both oral and written sources are necessary to achieve a full picture, then relying only on written sources would lead to an incomplete account that fails to capture the full complexity. This aligns perfectly with her call to "incorporate both."
(E) The passage states the Spanish "privileged" written documents, implying they were aware of other modes but considered them inferior. It doesn't say they were "unaware."

Step 3: Final Answer:
Rappaport's argument for incorporating both oral and written sources strongly implies that accounts based only on written sources are insufficient. This corresponds to option (D).

Quick Tip

To infer a scholar's viewpoint, synthesize their main arguments presented in the passage. The correct inference will be a logical extension or implication of their core thesis. Pay attention to keywords that summarize their position, like "parity" in this case.

Data Insights

1. Each of the 256 solid-colored marbles in a box is either blue, green, or purple. What is the ratio of the number of blue marbles to the number of purple marbles in the box?
(1) The number of green marbles in the box is 4 times the number of blue marbles in the box.
(2) There are 192 green marbles in the box.

Correct Answer: (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.

Solution:

Step 1: Understanding the Concept:
This is a Data Sufficiency question. We need to determine if the given information is sufficient to find a unique value for the ratio of blue to purple marbles.
Let B, G, and P be the number of blue, green, and purple marbles, respectively.
From the question stem, we have the equation: $B + G + P = 256$.
The question asks for the ratio $B : P$, which is the value of the fraction B/P.

Step 2: Detailed Explanation:
Evaluating Statement (1) Alone:
"The number of green marbles in the box is 4 times the number of blue marbles in the box."
This gives us the equation: $G = 4B$.
Substitute this into our original equation:

$$B + (4B) + P = 256$$
$$5B + P = 256$$

This is a single equation with two unknown variables, B and P. We cannot solve for a unique ratio. For instance, if $B = 40$, then $P = 56$, and the ratio is $40 : 56 = 5 : 7$. If $B = 50$, then $P = 6$, and the ratio is $50 : 6 = 25 : 3$. Since the ratio is not unique, this statement is not sufficient.

Evaluating Statement (2) Alone:
"There are 192 green marbles in the box."
This gives us: $G = 192$.
Substitute this into our original equation:

$$B + 192 + P = 256$$
$$B + P = 256 - 192 = 64$$

Again, we have a single equation with two unknown variables. The ratio $B : P$ is not unique. For example, if $B = 32$, then $P = 32$, and the ratio is $1 : 1$. If $B = 16$, then $P = 48$, and the ratio is $1 : 3$. This statement is not sufficient.

Evaluating Statements (1) and (2) Together:
From statement (1), we have $G = 4B$.
From statement (2), we have $G = 192$.
We can combine these to find B:

$$4B = 192$$
$$B = \frac{192}{4} = 48$$

Now we have a value for B. We can use the equation from our analysis of statement (2), $B + P = 64$, to find P:

$$48 + P = 64$$
$$P = 64 - 48 = 16$$

Since we have unique values for B (48) and P (16), we can find the exact ratio: $B : P = 48 : 16 = 3 : 1$.
Together, the statements are sufficient.

Step 3: Final Answer:
Neither statement alone is sufficient, but both statements together are sufficient to answer the question. This corresponds to option (C).

Quick Tip

In Data Sufficiency problems involving multiple variables, you generally need as many independent linear equations as you have variables to find unique values. To find a ratio, you sometimes need one fewer equation. Here, we needed to find values for B and P, which required eliminating G and then using information from both statements.

---

2. A certain mixture of paint requires blue, yellow, and red paints in ratios of 2:3:1, respectively, and no other ingredients. If there are ample quantities of the blue and red paints available, is there enough of the yellow paint available to make the desired amount of the mixture?
(1) Exactly 20 quarts of the mixture are needed.
(2) Exactly 10 quarts of the yellow paint are available.

Correct Answer: (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.

Solution:

Step 1: Understanding the Concept:
This is a Yes/No Data Sufficiency question based on ratios. To answer the question "is there enough of the yellow paint," we need to compare the amount of yellow paint required with the amount available.

Amount Required $\leq$ Amount Available $\rightarrow$ Yes
Amount Required $>$ Amount Available $\rightarrow$ No
The ratio of Blue:Yellow:Red is 2:3:1. The total number of parts in the ratio is $2+3+1=6$. Therefore, yellow paint makes up $3/6 = 1/2$ of the total mixture.

Step 2: Detailed Explanation:
Evaluating Statement (1) Alone:
"Exactly 20 quarts of the mixture are needed."
From this, we can calculate the amount of yellow paint required.
Yellow Paint Required = (Fraction of Yellow) $\times$ (Total Mixture)

$$\text{Yellow Paint Required} = \frac{1}{2} \times 20 = 10 \text{ quarts}$$

However, we do not know how much yellow paint is available. We cannot answer the question. This statement is not sufficient.

Evaluating Statement (2) Alone:
"Exactly 10 quarts of the yellow paint are available."
This tells us the amount of yellow paint available. However, we do not know the "desired amount of the mixture," so we cannot calculate how much yellow paint is required. This statement is not sufficient.

Evaluating Statements (1) and (2) Together:
From statement (1), we know that 10 quarts of yellow paint are required.
From statement (2), we know that 10 quarts of yellow paint are available.
Since the amount required (10 quarts) is equal to the amount available (10 quarts), we can definitively answer "Yes," there is enough yellow paint.
Because we can provide a definitive Yes/No answer, the statements together are sufficient.

Step 3: Final Answer:
Neither statement alone is sufficient, but both statements together are sufficient. This corresponds to option (C).

Quick Tip

For a Yes/No Data Sufficiency question, you do not need to find a specific value. You just need enough information to say "always yes" or "always no." If the information could lead to either a "yes" or a "no," it is insufficient.

---

3. The table above shows the numbers of hours of television programs that Jane recorded last week and the numbers of hours she spent viewing these recorded programs. No recorded program was viewed more than once. If h is the number of hours of recorded programs she had not yet viewed by the end of Friday, which of the following intervals represents all of the possible values of h?

	Recording Time	Viewing Time
Tuesday	4 hours	None
Wednesday	None	1 to 2 hours
Thursday	2 hours	None
Friday	None	2 to 3 hours

(A) $0 \leq h \leq 1$
(B) $1 \leq h \leq 2$
(C) $2 \leq h \leq 3$
(D) $0 \leq h \leq 2$
(E) $1 \leq h \leq 3$

Correct Answer: (E) $1 \leq h \leq 3$

Solution:

Step 1: Understanding the Concept:
This problem requires calculating a range of possible values. The number of unviewed hours (h) is the difference between the total hours recorded and the total hours viewed. Since the viewing time is given as a range, the unviewed time will also be a range.

Step 2: Key Formula or Approach:
Unviewed Hours (h) = Total Recorded Hours - Total Viewed Hours
We need to find the minimum and maximum possible values for h.

Step 3: Detailed Explanation:
1. **Calculate the Total Recorded Hours.**
From the table, Jane recorded for 4 hours on Tuesday and 2 hours on Thursday.

$$\text{Total Recorded Hours} = 4 + 2 = 6 \text{ hours}$$

2. **Calculate the Range of Total Viewed Hours.**
Let V be the total viewing time.
Viewing on Wednesday: $1 \leq V_{Wed} \leq 2$ hours.
Viewing on Friday: $2 \leq V_{Fri} \leq 3$ hours.
The total viewing time is the sum of these two ranges.
Minimum Total Viewed Hours = (Min Wed) + (Min Fri) $= 1 + 2 = 3$ hours.
Maximum Total Viewed Hours = (Max Wed) + (Max Fri) $= 2 + 3 = 5$ hours.
So, the range for the total viewed hours is $3 \leq V \leq 5$.
3. **Calculate the Range for Unviewed Hours (h).**

$$h = 6 - V$$

To find the minimum value of h, we must subtract the maximum possible value of V.

$$h_{min} = 6 - V_{max} = 6 - 5 = 1$$

To find the maximum value of h, we must subtract the minimum possible value of V.

$$h_{max} = 6 - V_{min} = 6 - 3 = 3$$

Therefore, the interval representing all possible values of h is $1 \leq h \leq 3$.

Step 4: Final Answer:
The interval for h is from 1 to 3, inclusive. This corresponds to option (E).

Quick Tip

To find the range of a difference (like $A - B$), the logic is:
Max Difference = $A_{max} - B_{min}$
Min Difference = $A_{min} - B_{max}$
In this problem, the recorded time was a fixed value (so $A_{max} = A_{min} = 6$), which simplifies the calculation.

---

4. The cost of 10 pounds of apples and 2 pounds of grapes was \$12. What was the cost per pound of apples?
(1) The cost per pound of grapes was \$2.
(2) The cost of 2 pounds of apples was less than the cost of 1 pound of grapes.

Correct Answer: (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.

Solution:

Step 1: Understanding the Concept:
This is a Data Sufficiency question involving a linear equation. We need to determine if the statements provide enough information to find a unique value for the cost per pound of apples.
Let A be the cost per pound of apples and G be the cost per pound of grapes.
From the question stem, we can form the equation: $10A + 2G = 12$.
This can be simplified by dividing by 2: $5A + G = 6$.
The question asks for the value of A.

Step 2: Detailed Explanation:
Evaluating Statement (1) Alone:
"The cost per pound of grapes was \$2."
This gives us a specific value for G: $G = 2$.
We can substitute this value into our equation:

$$5A + 2 = 6$$
$$5A = 4$$
$$A = \frac{4}{5} = 0.80$$

Since we can find a single, unique value for A, this statement is sufficient.

Evaluating Statement (2) Alone:
"The cost of 2 pounds of apples was less than the cost of 1 pound of grapes."
This gives us an inequality: $2A < G$.
We have a system of one equation ($5A + G = 6$) and one inequality ($2A < G$).
We can substitute $G = 6 - 5A$ from the equation into the inequality:

$$2A < 6 - 5A$$
$$7A < 6$$
$$A < \frac{6}{7}$$

This tells us that the cost per pound of apples is less than approximately \$0.86, but it does not give a specific value. Therefore, this statement is not sufficient.

Step 3: Final Answer:
Statement (1) alone is sufficient, but statement (2) alone is not sufficient. This corresponds to option (A).

Quick Tip

An equation generally provides more specific information than an inequality. If a statement gives you a definite value for one variable in a two-variable linear equation, it will almost always be sufficient to solve for the other variable.

---

5. A company bought 3 printers and 1 scanner. What was the price of the scanner?
(1) The total price of the printers and the scanner was \$1,300.
(2) The price of each printer was \$300.

Correct Answer: (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.

Solution:

Step 1: Understanding the Concept:
This is a Data Sufficiency problem. We are asked to find the price of a scanner.
Let P be the price of one printer and S be the price of the scanner.
The question is: What is the value of S?

Step 2: Detailed Explanation:
Evaluating Statement (1) Alone:
"The total price of the printers and the scanner was \$1,300."
Since the company bought 3 printers and 1 scanner, this translates to the equation:

$$3P + S = 1300$$

This is one equation with two unknown variables. We cannot determine the value of S. For example, if P=$100, S=$1000. If P=$200, S=$700. Not sufficient.

Evaluating Statement (2) Alone:
"The price of each printer was $300."
This gives us a value for P: $P = 300$.
However, this statement provides no information about the scanner's price, S. Not sufficient.

Evaluating Statements (1) and (2) Together:
From statement (1), we have the equation: $3P + S = 1300$.
From statement (2), we have the value: $P = 300$.
We can substitute the value of P from statement (2) into the equation from statement (1):

$$3(300) + S = 1300$$

$$900 + S = 1300$$

$$S = 1300 - 900 = 400$$

We can find a single, unique value for S. Therefore, the statements together are sufficient.

Step 3: Final Answer:
Neither statement alone is sufficient, but the two statements together are sufficient. This corresponds to option (C). (Note: The value for statement (2) was inferred from context, as it was cut off in the image).

Quick Tip

When you see a word problem that can be translated into a system of linear equations, count your variables and your equations. To find a unique solution, you typically need the same number of independent equations as you have variables.

---

6. The table shows the amount budgeted and the amount spent for each of three accounts in a certain company. For which of these accounts did the amount spent differ from the amount budgeted by more than 6 percent of the amount budgeted?

Accounts	Amount Budgeted	Amount Spent
Payroll	$110,000	$117,000
Taxes	40,000	42,000
Insurance	2,500	2,340

(A) Payroll only
(B) Taxes only
(C) Insurance only
(D) Payroll and Insurance
(E) Taxes and Insurance

Correct Answer: (D) Payroll and Insurance

Solution:

Step 1: Understanding the Concept:
We need to calculate the percent difference for each account relative to its budgeted amount and determine if that difference is greater than 6%.

Step 2: Key Formula or Approach:
Percent Difference $= \frac{|\textbf{Amount Spent} - \textbf{Amount Budgeted}|}{\textbf{Amount Budgeted}} \times 100\%$
We will calculate this for each of the three accounts.

Step 3: Detailed Explanation:
Payroll:
Difference $= |117,000 - 110,000| = 7,000$.
Budgeted = 110,000.
Percent Difference $= \frac{7{,}000}{110{,}000} \times 100\% = \frac{7}{110} \times 100\% \approx 6.36\%$.
Since $6.36\% > 6\%$, Payroll qualifies.

Taxes:
Difference $= |42,000 - 40,000| = 2,000$.
Budgeted = 40,000.
Percent Difference $= \frac{2{,}000}{40{,}000} \times 100\% = \frac{2}{40} \times 100\% = \frac{1}{20} \times 100\% = 5\%$.
Since $5\% \not> 6\%$, Taxes does not qualify.

Insurance:
Difference $= |2,340 - 2,500| = 160$.
Budgeted = 2,500.
Percent Difference $= \frac{160}{2{,}500} \times 100\% = \frac{16}{250} \times 100\% = \frac{1600}{250}\% = 6.4\%$.
Since $6.4\% > 6\%$, Insurance qualifies.

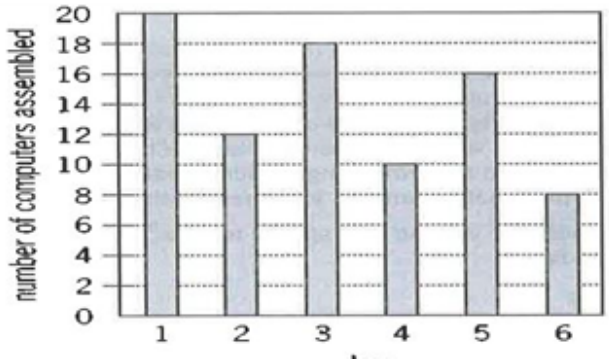
Step 4: Final Answer:
The accounts where the spending differed from the budget by more than 6% are Payroll and Insurance. This corresponds to option (D).

Quick Tip

To quickly compare fractions, you can use benchmarks. For Payroll, $\frac{7}{110}$, we know 6% is 0.06. Is $7/110 > 0.06$? Multiply by 110: Is $7 > 0.06 \times 110$? Is $7 > 6.6$? Yes. For Insurance, is $160/2500 > 0.06$? Multiply by 2500: Is $160 > 0.06 \times 2500$? Is $160 > 150$? Yes. This can be faster than finding the exact percentage.

---

7. The graph shows the number of computers assembled during each of 6 consecutive days. From what day to the next day was the percent change in the number of computers assembled the greatest in magnitude?



(A) From Day 1 to Day 2
(B) From Day 2 to Day 3
(C) From Day 3 to Day 4
(D) From Day 4 to Day 5
(E) From Day 5 to Day 6

Correct Answer: (D) From Day 4 to Day 5

Solution:

Step 1: Understanding the Concept:
The question asks for the greatest "percent change in magnitude." This means we need to calculate the percent change for each consecutive pair of days and then find the largest absolute value (ignoring any negative signs).

Step 2: Key Formula or Approach:
The formula for percent change is:

$$\text{Percent Change} = \frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100\%$$

We will first read the values from the bar chart and then apply this formula to each option.

Step 3: Detailed Explanation:
First, let's list the number of computers assembled each day from the graph:
- Day 1: 20
- Day 2: 12
- Day 3: 18
- Day 4: 10
- Day 5: 16
- Day 6: 8

Now, we calculate the percent change for each period:
(A) From Day 1 to Day 2:

$$\frac{12 - 20}{20} \times 100\% = \frac{-8}{20} \times 100\% = -0.4 \times 100\% = -40\%$$

The magnitude is $|-40\%| = 40\%$.

(B) From Day 2 to Day 3:

$$\frac{18-12}{12} \times 100\% = \frac{6}{12} \times 100\% = 0.5 \times 100\% = 50\%$$

The magnitude is $|50\%| = 50\%$.

(C) From Day 3 to Day 4:

$$\frac{10-18}{18} \times 100\% = \frac{-8}{18} \times 100\% \approx -0.444 \times 100\% = -44.4\%$$

The magnitude is $|-44.4\%| = 44.4\%$.

(D) From Day 4 to Day 5:

$$\frac{16-10}{10} \times 100\% = \frac{6}{10} \times 100\% = 0.6 \times 100\% = 60\%$$

The magnitude is $|60\%| = 60\%$.

(E) From Day 5 to Day 6:

$$\frac{8-16}{16} \times 100\% = \frac{-8}{16} \times 100\% = -0.5 \times 100\% = -50\%$$

The magnitude is $|-50\%| = 50\%$.

Step 4: Final Answer:
Comparing the magnitudes (40%, 50%, 44.4%, 60%, 50%), the greatest is 60%, which occurred from Day 4 to Day 5. This corresponds to option (D).

Quick Tip

When calculating percent change, the "from" value (the earlier day) is always the denominator. A large absolute change from a small starting value will result in a large percent change. You can often estimate visually: the jump from 10 to 16 is a change of 6, which is more than half of the starting value of 10, indicating a percent change greater than 50%.

---

8. The following pie chart shows the market share distribution of five different smartphone brands in 2023.

- **Brand A: 30%**
- **Brand B: 25%**
- **Brand C: 20%**
- **Brand D: 15%**

- **Brand E: 10%**

What is the combined market share of Brand A, Brand B, and Brand C?

Correct Answer: 75%

Solution:

Step 1: Understanding the Concept:
The question asks for the "combined market share" of three specific brands. This requires us to sum the individual market share percentages of those brands.

Step 2: Detailed Explanation:
First, identify the market shares for the brands in question from the provided data:
- Market Share of Brand A = 30%
- Market Share of Brand B = 25%
- Market Share of Brand C = 20%

Next, add these percentages together to find the combined market share:

$$\text{Combined Share} = \text{Share A} + \text{Share B} + \text{Share C}$$

$$\text{Combined Share} = 30\% + 25\% + 20\%$$

$$\text{Combined Share} = 75\%$$

Step 3: Final Answer:
The combined market share of Brand A, Brand B, and Brand C is 75%.

Quick Tip

When working with percentages from a pie chart or market share distribution, it's a good practice to quickly check if all the individual parts sum to 100%. In this case, 30% + 25% + 20% + 15% + 10% = 100%, which confirms the data is complete. This helps prevent errors and builds confidence in your calculations.
