

NUMERICAL REASONING SAMPLE TEST

Question 1

Find the missing numbers in the following series:

81 76 72 ? 67

A: 71 B: 70 C: 69 D: 68 E: None of these

Question 2

The numbers in the grid go together in a certain way.

Which number should be in the square marked by the question mark?

16	4	5	4
12	6	6	3
10	4	7	2
7	3	5	?

A: 2 B: 3 C: 4 D: 5 E: None of these

Question 3

Ginger sold 12 outfits today to her customers. She sold 15 both yesterday and the day before. How many does she need to sell tomorrow if she wants to average 13 outfits per day for the four days?

- A. 13
 - B. 18
 - C. 10
 - D. 12
 - E. None of the above
-

END OF NUMERICAL REASONING SAMPLE

NUMERICAL REASONING

SAMPLE TEST DETAILED SOLUTIONS

Question 1: C – 69

Steps	Working
1. Find out the pattern followed by the numbers in the series.	The given series: 81, 76, 72, ?, 67 Pattern: these numbers are progressively deducted from the elements in the series: 5, 4, 3, 2
2. Find out the missing number.	Therefore to get the missing number $72 - 3 = 69$

Question 2: A – 2

Steps	Working																
1. Determine the pattern followed by numbers in the grid.	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">16</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">12</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">3</td> <td style="text-align: center;">5</td> <td style="text-align: center;">?</td> </tr> </table> <p>The pattern: on each row the sum of numbers in the first two columns (starting from left to right) equal the product of the numbers in the last two columns 1st row: $16 + 4 = 5 \times 4$ 2nd row: $12 + 6 = 6 \times 3$</p>	16	4	5	4	12	6	6	3	10	4	7	2	7	3	5	?
16	4	5	4														
12	6	6	3														
10	4	7	2														
7	3	5	?														
2. Answer the question	Last row: $7 + 3 = 5 \times ?$ $10 = 5 \times ?$ $? = 2$																

Question 3: C – 10

Steps	Working
1. Define the variables	Let x represent the number of outfits Ginger will sell tomorrow
2. Determine what needs to be added to average 13 outfits per day for four days	$12 + 15 + 15 + x$ needs to average to 13
3. Write the equation	If four terms are to average to 13, their sum must be 4 times 13, or 52. Thus: $12 + 15 + 15 + x = 52$
4. Add like terms and solve for x	$42 + x = 52$ $x = 52 - 42$ $x = 10$

VERBAL REASONING SAMPLE TEST

Question 1

A synonym for voluntary is

- a. willing
 - b. charity
 - c. prisoner
 - d. careless
 - e. None of these
-

Question 2

All PIGS are JIGS and some JIGS are BIGS. Which of the following is false?

- a. Some BIGS are PIGS
 - b. Some JIGS are PIGS
 - c. All BIGS are JIGS
 - d. Some BIGS are JIGS
 - e. None of these
-

Question 3

All of these words are alike in some way: uproar, commotion, turmoil, ferment.
Which word could fit in the list?

- a. Silence
- b. Instruction
- c. Tumult
- d. Concord
- e. None of these

END OF VERBAL REASONING SAMPLE

VERBAL REASONING

SAMPLE TEST DETAILED SOLUTIONS

Question 1: A – willing

A synonym is a word of similar meaning. *Voluntary* has a similar meaning to *willing* and they are both adjectives, whereas the remaining words are nouns.

Option B: Charity is something given to a needy person.

Option C: A prisoner is a person held under close guard.

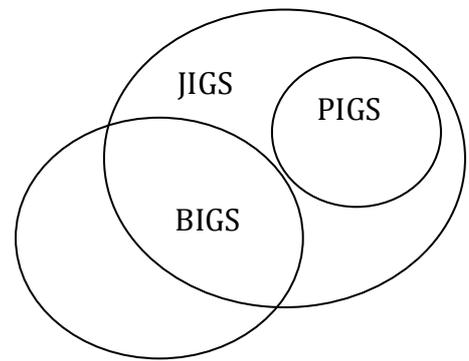
Option D: Being careless is when you are not cautious or attentive enough.

Question 2: C – All BIGs are JIGs

You can answer this question using a Venn diagram.

It can be seen from the grouping that C is false.

All BIGS are not JIGS



Question 3: C - Tumult

All the words denote a degree of chaos, as does tumult according to this definition:

Tumult (n): a loud, confused noise, especially one caused by a large mass of people.

Option A: Silence is when there is no sound

Option B: An instruction is the action of giving directions or orders

Option D: Concord is a state of peacefulness

MATHEMATICS SAMPLE TEST

Question 1

Which signs need to be inserted to make the following equation true?

$$6 \square - 6 \square 8 \square 4 = 3$$

A: $\times, -, \times$

B: $\times, +, \div$

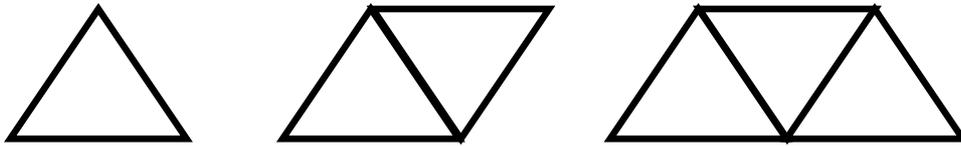
C: $-, +, \times$

D: $+, \times, \div$

E: $\div, +, -$

Question 2

The diagrams below show the first three in a series of triangular supports for antennas.



How many line segments will be needed to form the 10th diagram in the series?

A. 29

B. 23

C. 21

D. 20

E. None of these

Question 3

Joe answered 24% of the questions on his maths test incorrectly. There were 50 questions on this test. All the questions carried equal marks. How many questions did Joe answer incorrectly?

A. 76

B. 46

C. 42

D. 38

E. None of these

END OF MATHEMATICS SAMPLE

MATHEMATICS

SAMPLE TEST DETAILED SOLUTIONS

Question 1: E

Steps	Working
1. Use trial and error. If we choose A: $\times, -, \times$	$6 \square - 6 \square 8 \square 4 = 3$ $= 6 \times -6 - 8 \times 4$ $= (6 \times -6) - (8 \times 4)$ $= -36 - 32$ $= -68 \quad \text{This is incorrect.}$
2. If we choose B: $\times, +, \div$	$6 \square - 6 \square 8 \square 4 = 3$ $= 6 \times -6 + 8 \div 4$ $= (6 \times -6) + (8 \div 4)$ $= -36 + 2$ $= -34 \quad \text{This is incorrect.}$
3. If we choose C: $-, +, \times$	$6 \square - 6 \square 8 \square 4 = 3$ $= 6 - -6 + 8 \times 4$ $= 6 + 6 + (8 \times 4)$ $= 12 + 32$ $= 44 \quad \text{This is incorrect}$
4. If we choose D: $+, \times, \div$	$6 \square - 6 \square 8 \square 4 = 3$ $= 6 + -6 \times 8 \div 4$ $= (6 - 6) \times (8 \div 4)$ $= 0 \times 2$ $= 0 \quad \text{This is incorrect. If options A, B, C, and D are incorrect, then E is the correct answer.}$
5. If you double check if option E is correct. If we choose E: $\div, +, -$	$6 \square - 6 \square 8 \square 4 = 3$ $= 6 \div -6 + 8 - 4$ $= (6 \div -6) + (8 - 4)$ $= -1 + 4$ $= 3 \quad \text{This is correct. The answer is E}$

Question 2: C - 21

1st diagram: 1 + 2 line segments
 2nd diagram: 1 + 2 + 2 line segments
 3rd diagram: 1 + 2 + 2 + 2 line segments

From the foregoing: the n^{th} term = $1 + (2 \times n)$

Therefore; 10th diagram = $1 + (2 \times 10) = 21$

21 line segments are needed to form the 10th diagram in the series.

Question 3: E – None of these

Steps	Working
1. Convert the % to a decimal	$24\% = 0.24$
2. Multiply by the total number of questions by 0.24	$0.24 \times 50 = 12$ questions answered incorrectly.
3. Calculate the number of questions Joe answered correctly	$50 - 12 = 38$ questions answered correctly

Alternative method to calculate percentage

Steps	Working
1. Convert the % to a fraction	$24\% = \frac{24}{100}$
2. Cancel the fraction before multiplying	$\frac{24}{100} \times \frac{50}{1}$ $= \frac{24}{2} \times \frac{50}{1}$ $= \frac{12}{1} \times \frac{1}{1}$ $= 12 \text{ questions answered incorrectly}$
3. Calculate the number of questions Joe answered correctly	$50 - 12 = 38$ questions answered correctly

READING COMPREHENSION

SAMPLE TEST

Questions 1 – 3 are based on the excerpt below

Aesop's Fable – *The Monkey and the Dolphin*

A Sailor, bound on a long voyage, took with him a Monkey to amuse him while on shipboard. As he sailed off the coast of Greece, a violent tempest arose, in which the ship was wrecked, and he, his Monkey and all the crew were obliged to swim for their lives. A Dolphin saw the Monkey contending with the waves, and supposing him to be a man (whom he is always said to befriend), came and placed himself under him, to convey him on his back in safety to the shore. When the Dolphin arrived with his burden in sight of land not far from Athens, he demanded of the Monkey if he were an Athenian, who answered that he was, and that he was descended from one of the noblest families in that city.

The Dolphin then inquired if he knew the Piræus (the famous harbor of Athens). The Monkey, supposing that a man was meant, and being obliged to support his previous lie, answered that he knew him very well, and that he was an intimate friend, who would, no doubt, be very glad to see him. The Dolphin, indignant at these falsehoods, dipped the Monkey under the water, and drowned him.

1. The moral of this fable is that

- a. Make sure you get your story straight before embarking on a lie
- b. Lies will always be found out
- c. It is too difficult to maintain a lie
- d. Never lie to a dolphin
- e. None of these

2. The word “obliged” most nearly means

- a. Grateful
- b. Assisted
- c. Requested
- d. Necessitated
- e. None of these

3. The Dolphin in this fable is best described as

- a. Cunning/wise
- b. Trusting/violent
- c. Gullible/proud
- d. Cautious/vengeful
- e. None of these

END OF READING COMPREHENSION SAMPLE

READING COMPREHENSION

SAMPLE TEST DETAILED SOLUTIONS

Question 1: C – It is too difficult to maintain a lie

The fable suggests that “It is too difficult to maintain a lie” – the monkey soon found himself caught out by the dolphin because he was asked to support his original lie with more details.

Question 2: D – necessitated

The fact “the crew were obliged to swim for their lives” suggests this action was necessary or essential.

Question 3: D – cautious/ vengeful

The Dolphin is cautious, as he asks many questions of the monkey rather than accepting his story at face value. He is also vengeful, as he seeks to punish the monkey for his lies.

END OF SAMPLE TEST