

12 17

13 1

14 113

15 2893

Section 2 : Section B Integers - 10 Questions

16 44

17 352

18 8

19 18

20 88

21 30

22 9

23 5

24 2

25 94

TEST

AMO Grade4 Mock Test Paper 2

SOLUTIONS

SECTIONS

1. Section A MCQs - 15 Questions
2. Section B Integers - 10 Questions

Section 1 : Section A MCQs - 15 Questions

1

Since 4 kids can paint 4 balls in 4 minutes, 4 kids can paint $4 \times 3 = 12$ balls in $4 \times 3 = 12$ minutes.

2

Regrouping strategy:

$$25 \times (48 + 32 + 20) = 25 \times 100 = 2500$$

3

$100 \div 5 = 20$ numbers are divisible by 5.

$100 \div 7 = 14R2$, 14 numbers are divisible 7.

Among 20 multiples of 5 and 14 multiples of 7, there are 2 numbers, i.e. 35 and 70 which are both common multiples of 5 and 7.

Thus, there are $100 - 20 - 14 + 2 = 68$ numbers which are not divisible by 5 or 7.

4

The two missing numbers in the last row should be 4 and 8 respectively. The only numbers left are 1, 5, 6 and 7.

	9	
	2	*
8	4	3

- * cannot be 1 as it is too small for any side to add up to 15.
 - * cannot be 5 as the second row will have another number 8 to add up to 15.
 - * cannot be 6 as the third column will have another number 6 to add up to 15.
- Thus, * must be 7.

5

Since $8 \times 8 = 64$, $C = 4$.

To get 4 at the tens place, consider the possible values of A as follows:

A	$\times 8$	$+6$ regrouped
1	8	14
2	16	22
3	24	30
4	32	38
5	40	46
6	48	54

So, we notice that the only possible values of A can be either 1 or 6. But if $A = 1$, B will also be 1 which is impossible. Thus, $A = 6$.

Since $A = 6$, $B = 5$. Therefore, $A + B + C = 6 + 5 + 4 = 15$.

6

The largest 3-digit number is 999.

However, $999 \div 24 = 41R15$ is not divisible by 24.

Hence the largest 3-digit multiple of 24 is $41 \times 24 = 984$.

7

Size of the Square	Number of squares comprised of X
1×1	1
2×2	4
3×3	4
4×4	1
Total	10

8

The difference between B and 9 is 9. The only possible solution is 18. So, $B = 8$.

In the tens column, $14 - C = 9$, so $C = 5$.

As A borrowed 1 to 5 at the tens place, $A = 2 + 1 = 3$.

$$A5B + C9 = 358 + 59 = 417$$

A	5	B
-	C	9
2	9	9

9

Two-fifths of Sarah's pencils = 40. So, Sarah has $40 \div \frac{2}{5} = 100$ pencils.

Eight-ninths of Rose's pencils = 40. So, Rose has $40 \div \frac{8}{9} = 45$ pencils.

Thus, Sarah has more pencils and she has $100 - 45 = 55$ more pencils than Rose.

10

There are $5 + 9 + 4 = 18$ green, orange and blue candies in total.

In the worst-case scenario, Sam takes out all the candies in other colours before he gets his first red candy. Therefore, he must take $18 + 1 = 19$ candies so that he gets his first red candy.

11

There are $4 \times 4 \times 4 = 64$ small cubes in total.

Only corner cubes have 3 faces painted. There are 8 small corner cubers.

The number of smaller cubes with at most 2 sides painted = $64 - 8 = 56$

12

$$\text{Combined age now} = 37 - 5 - 5 = 27$$

$$\text{Combined age 3 years ago} = 27 - 3 - 3 = 21$$

Derrick was twice as old as Stacy 3 years ago.

Let Stacy's age 3 years ago be 1 unit and Derrick's age be 2 units:

$$1 \text{ unit} + 2 \text{ units} = 3 \text{ units} = 21$$

$$1 \text{ unit} = 21 \div 3 = 7 \text{ (Stacy's age 3 years ago)}$$

$$\text{So, Derrick's current age} = (7 \times 2) + 3 = 17 \text{ years old}$$

13

Sum of all the numbers on a regular 6-sided dice = $1 + 2 + 3 + 4 + 5 + 6 = 21$.

Sum of all the numbers on two regular 6-sided dice = $21 + 21 = 42$.

However, the sum of numbers on all the visible faces was only 31.

It implies that the two faces which are not visible have a sum of $42 - 31 = 11$ which is only possible when one face has a 6 and the other has a 5.

Therefore, the difference between the numbers facing the ground is $6 - 5 = 1$.

14

Ron may think of 38, 46, 64 or 83 since the product of digits in these numbers is 24.

Vanda may think of 57 or 75 since the product of digits in these numbers is 35.

Draw a table to compare Ron's possible numbers to Vanda's possible numbers:

Ron's number	38	46	64	83
Difference between Ron's number and 57	19	11	7	26
Difference between Ron's number and 75	37	29	11	8

As per the table, Ron's number is 38 and Vanda's number is 75.

Thus, the sum of their numbers is $38 + 75 = 113$.

15

Page 1 to 9: 9 digits

Page 10 to 99: $90 \times 2 = 180$ digits ($99 - 10 + 1 = 90$ 2-digit numbers)

Page 100 to 999: $900 \times 3 = 2700$ digits ($999 - 100 + 1 = 900$ 3-digit numbers)

Page 1000: 4 digits

There are $9 + 180 + 2700 + 4 = 2893$ digits.

Section 2 : Section B Integers - 10 Questions

16

If he put 6 sweets in each box, the last box would have only 2 sweets, meaning that there would be a shortage of 4 sweets.

The difference in the number of sweets = $6 - 5 = 1$

The number of boxes = $4 + 3 + 1 = 8$

The number of sweets = $(8 \times 5) + 4 = 44$ or $(8 \times 6) - 4 = 44$

17

$$(Number \times 9) \div 4 \times 25 = 19800$$

$$Number = (19800 \div 25) \times 4 \div 9 = 352$$

18

Any number whose sum of digits is a multiple of 3 is divisible by 3.

Thus, $6 + 5 + 3 + 2 + m = 16 + m$ should be a multiple of 3.

$$16 + m = 18 \text{ or } 21 \text{ or } 24$$

Therefore, m can be 2, 5 or 8 and the largest possible value of m is 8.

19

-

Since the third digit is half of the first digit and one less than the second digit, the only possible digits are as follows:

First Digit	Second Digit	Third Digit	Sum of the digits
4	3	2	9
6	4	3	13
8	5	4	17

As the sum of the first three digits is 13, the first three digits must be 643.

Since the sum of the last three digits is 8 and the third digit is 3, the sum of the last two digits must be $8 - 3 = 5$.

6 must then be the largest digit of the number and so, the 4th digit is 5 (the second-largest digit of the number) and the last digit is 0.

The number required is 64350 and its sum of digits is $6 + 4 + 3 + 5 + 0 = 18$.

20

The pattern is as follows:

Group	Sum	Pattern
1	$1 + 4 + 6 = 11$	$11 + 0 \times 7 = 11$
2	$2 + 6 + 10 = 18$	$11 + 1 \times 7 = 18$
3	$3 + 8 + 14 = 25$	$11 + 2 \times 7 = 25$
...	...	...
12		$11 + 11 \times 7 = 88$

21

Since there are 16 trees and 2 cars in between, the total number of cars is

$$(16 - 1) \times 2 = 30.$$

22

Since 10 small ropes are tied together, there will be 9 knots and thus 1 cm overlapping part for each of the 9 knots. Total length of each rope = $(81 + 9) \div 10 = 9$ cm

23

The product of $99 \times 101 \times 103 \times 105 \times 107$ will have the same ones digit as the product of $9 \times 1 \times 3 \times 5 \times 7$, which is 5.

The product of $100 \times 102 \times 104 \times 106 \times 108$ will have '0' at the ones place since the ones digit in 100 is 0.

Therefore, $10 - 5 = 5$ will be at the ones place of the given expression.

24

Given that lawyer is younger than James and Jade has different age from the lawyer, Jack must be the lawyer.

Jack, the lawyer is older than the firefighter but younger than James. Thus, James is not the firefighter, but Jade is.

	Jack	Jade	James
Firefighter	x		
Lawyer	✓	x	x
Painter			

25

If the new average is 87 for 3 subjects, the total marks of these 3 subjects would be $87 \times 3 = 261$.

Total marks in English and Science = $82 + 85 = 167$

Mark to be scored in Mathematics = $261 - 167 = 94$