****

**KENDRIYA VIDYALAYA SANGATHAN**

**CCT TEST ITEMS**

**CLASS VIII: CHAPTER 14: FACTORISATION**

|  |  |
| --- | --- |
| **S. NO.** | **TITLE OF TEST ITEM** |
|  | JUICY WATERMELONS |
|  | AN OLD MAN’S WISH |
|  | A CARPETTED FLOOR |
|  | JOGGING FOR GOOD HEALTH |
|  | QUIZ COMPITITION |
|  | MATHS GAME |
|  | THE VILLAGE |
|  | GRAM PANCHAYAT |
|  | THREE FRIENDS |
|  | IRONY OF TWO GENIUS |
|  | RECTANGULAR FIELD |
|  | AGE PROBLEM |
|  | COMMERCIAL PROBLEM |
| SCORING KEY FOR ITEMS 1 TO 13 | |

**PISA CLASS VIII**

**FACTORISATION**

**TEST ITEM 1. JUICY WATERMELONS**

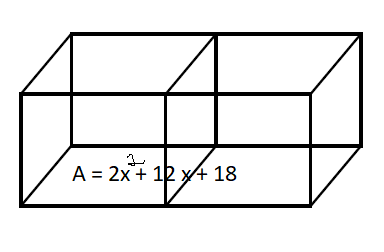
Cubic watermelons are watermelons grown into the shape of a cube. This isgenerally intended for space efficiency in small refrigerators. The practice ofgrowing cube watermelons is popular in Japan. The melons are grown in boxes and assume the shape of the container. Normal watermelons are round in nature.





Now if in a fridge two watermelons are placed in such a way that they form a cuboid.

The base of this cuboid is rectangle whose area is given by the expression A = 2x 2  + 12 x + 18.(see figure)



**QUESTION 1.1:**

A = 2x 2  + 12 x + 18.

What is the type of this expression?

1. Linear
2. quadratic
3. Cubic
4. None of these

**QUESTION 1.2:**

If area of the base is A = 2x 2  + 12 x + 18.

Find length and breadth of the rectangular base.

**QUESTION 1.3**

What will be the perimeter of the base of the cubical watermelon?

**QUESTION 1.4**

If the volume of the cube is given by the formula V = a x a x a = a3

Find volume of one cubical watermelon.

**QUESTION 1.5**

What will be the degree of the expression you obtain?

1. 0
2. 1
3. 2
4. 3

**TEST ITEM 2.AN OLD MAN’S WISH**

An old man who was Mathematician was dying and so he called his three sons. He told them that he will give all his money and property to the son who is able to solve the given questions as asked. One of the questions he asked them to solve the following expression

(2*a* + 3*b*) (*a* – *b*)



Sam’s solution(2*a* + 3*b*) (*a* – *b*) = 2*a 2* – 3*b2*

*Jim’s solution* (2*a* + 3*b*) (*a* – *b*) = 2*a 2 + ab* – 3*b2*

*Tom’s solution* (2*a* + 3*b*) (*a* – *b*) = 2*a 2 + 5 ab*  – 3*b2*

**QUESTION 2.1**

What type of expression 2a + 3b is?

1. Monomial
2. Binomial
3. Trinomial
4. None of these

**QUESTION 2.2**

What is the coefficient of ab in Tom’s solution?

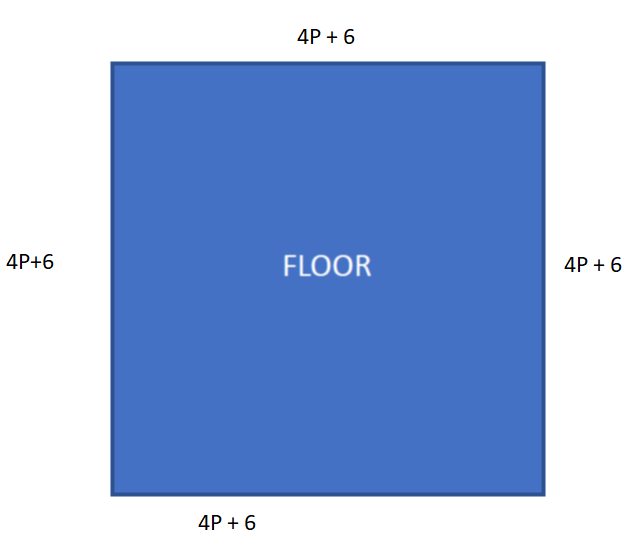
1. 1
2. 5
3. – 3
4. 5ab

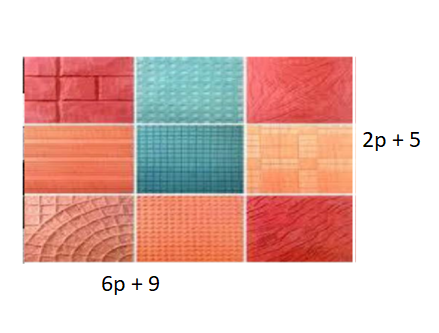
**QUESTION 2.3**

Who among Jim, Sam, and Tom solved it correctly? Write the steps to reach your conclusion.

**TEST ITEM 3. A CARPETTED FLOOR**

We have a floor and a carpet of the dimensions given below.





**QUESTION 3.1**

Find the area of the floor.

**QUESTION 3.2**

Find the area of the carpet.

**QUESTION 3.3**

Find the area of the floor not carpeted.

**QUESTION 3.4**

Factorise the expression you obtain.

**TEST ITEM 4. JOGGING FOR GOOD HEALTH**

Sunita was not keeping good health. Every other day, she used to fall sick because of some unknown reasons. She went to her family doctor and got herself examined. After her test, the doctor advised her to start taking supplements and exercises. She started jogging around a rectangular park daily.



On one day after jogging she noted that she covered total distance given by the expression

44(*x*4 – 5*x*3 – 24*x*2) km. she noted the time also. It was given by the expression 11x(*x* – 8) hours.

**QUESTION 4.1**

What is the degree of the expression 44(*x*4 – 5*x*3 – 24*x*2)

1. 7
2. 3
3. 4
4. 12

**QUESTION 4.2**

Find the factors of the expression 44(*x*4 – 5*x*3 – 24*x*2)

**QUESTION 4.3**

How much distance she covered in one hour?

**QUESTION 4.4**

What are the benefits of jogging in the garden?

**TEST ITEM 5 QUIZ COMPITITION**

There was a “Quiz Competition” organised by “Rotery Club Association”. Rahul participated in the contest and got scored as this manner – The sum of Rahul’s points in the 1st and 2nd round was 16. Had he got 1 point more in 1st round and 4 points less in 2nd round, the product of the points would have been 40.



* 1. Form the expression?
  2. factorise the expression ?
  3. In which round Rahul got less points?
  4. Is he got same points in both round?
  5. Find his points in 2nd round?

**TEST ITEM 6 MATHS GAME**

Mathematics teachers of class 8th says the students, “Today we will play an interesting maths game in short time”. All students agree with him. The teacher says that the distance between point A and point B is 200m. Students have to run from A to B and must solve the problem placed at point B. Whosoever runs back to initial point with correct solution, would be declared the winner. In this contest, three students Rani, Rahim and John participated and their solution are as follows –



|  |  |  |
| --- | --- | --- |
| Solution for Rani | Solution for Rahim | Solution for John |
| 2x²-2x-12  = 2x²-6x+4x-12  = 2x (x-3) + 4(x-3)  = (x-3) (2x+4)  = 2(x-3) (x+2) | 2x²-2x-12  = 2x²- 4x+6x-12  = 2x(x-2)+6(x-2)  = (x-2) (2x+6)  = 2(x-2) (x+3) | 2x²-2x-12  = 2x²-4x-6x-12  = 2x(x-2)-6(x-2)  = (x-2) (2x-6)  = 2(x-2) (x-3) |

1. Who is the winner?
2. Could all the participants solve the problem?
3. Who’s solution were wrong?

**TEST ITEM 7 THE VILLAGE**

A villager Dashrath has a rectangular Garden. The length of the garden is 2 m more than its breadth. If the area of the garden is 48m². He wants to cover the garden with fence. If the cost of fence is Rs.20 per metres.



* 1. Form the expression?
  2. Factorise expression?
  3. Find the dimension of the garden?
  4. Find the perimeter of the garden ?
  5. Find the expenditure of the fence ?

**TEST ITEM 8 GRAM PANCHAYAT**

Gram Panchayat has a rectangular field with perimeter 80m and area is 400m². They want to design a rectangular park on the field. Is it possible to design a rectangular Park of perimeter 80m and area 400m²?



1. Form the expression?
2. Factorise the expression?
3. Find the length of the park ?
4. Find the breadth of the park?
5. Are the length and breadth equaI?

**TEST ITEM 9 THREE FRIENDS**

Que. 1) John, Den and Roy are friends. They are solving some questions but they got different answers. They are confused.

John does a division as : = x+1

His friend Den has done the same division as : = x

And his other friend Roy does it same way : = + 1



Que 9.1 Who has done the division correctly?

1. John
2. Den
3. Roy
4. All of these

Que. 9.2 Why it is correct?

Que. 9.3 Who has done incorrectly?

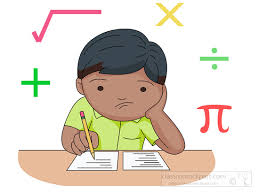
**TEST ITEM 10 IRONY OF TWO GENIUS**

Rosy and Dazy are two friends. They have done the algebraic expression in the following manner.

Rosy Dazy

(x+8)2= x2+64 (x+8)2= x2+16x+64

(x-5)2= x2-25 (x-5)2= x2-10x+25



Que. 10.1) Who has done correctly?

Que.10.2) Explain – why?

Que 10.3) complete the algebraic identity

(a-b)2=…………………………………………..

Que.10.4) complete the algebraic identity

(a+b)2=………………………………………….

Que.10.5) complete the algebraic identity

(a+b) (a-b) = ………………………………………….

**TEST ITEM 11 RECTANGULAR FIELD**

Rahul is a farmer who has a rectangular plot. He has to plough his farm. But he does not know the length and breadth of his farm. Will you help Rahul?



The area of his farm is given by polynomial P(x) =(x2-7x+12) square units.

**Area=P(x)=x2-7x+12**

1. Give possible expressions for length and breadth.
2. Find the perimeter of rectangular plot.
3. Find the length of diagonal, if x=7
4. Find the area of rectangle when x=7
5. Find the perimeter of rectangular plot while x=7

**TEST ITEM 12 AGE PROBLEMS**

Kate asked her father, what is his age? To this he replied that:” I am 5 years more than twice as old as you. The product of your age and my age in years is 900.



1. Will you help Kate to find their ages?
2. Express the above situation in an equation in mathematical form.
3. How old is Kate?
4. How old is Kate’s father?
5. Find the ratio of their ages?

**TEST ITEM 13 COMMERCIAL PROBLEMS**

There are three friends Sohan, Rohan and Manas. They decided to start a business of textiles together. They decided to share their capitals depending upon a variable expenditure. The capital polynomial of the three partners together is P(x) = x3+3x2-4x-12, which is the product of their individual share factors.



1. What is the type of this expression?
   1. Linear
   2. Quadratic
   3. Cubic
   4. None of these
2. Find their share factors.
3. What is the maximum share value ?
4. Find the value of their shares if x=5.
5. Find the average share of their shares if x=5.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MAPPING OF TEST ITEMS** | | | | |
| **MATHEMATICAL LITERACY** | | | | |
| **S.No.** | **TEST ITEM NO.** | **CLASS** | **CHAPTER** | **PROFICIENCY LEVEL** |
| 1 | 1.1 | VIII | FACTORISATION | 1 |
| 2 | 1.2 | VIII | FACTORISATION | 2 |
| 3 | 1.3 | VIII | FACTORISATION | 2 |
| 4 | 1.4 | VIII | FACTORISATION | 2 |
| 5 | 1.5 | VIII | FACTORISATION | 2 |
| 6 | 2.1 | VIII | FACTORISATION | 1 |
| 7 | 2.2 | VIII | FACTORISATION | 1 |
| 8 | 2.3 | VIII | FACTORISATION | 1 |
| 9 | 2.4 | VIII | FACTORISATION | 1 |
| 10 | 3.1 | VIII | FACTORISATION | 2 |
| 11 | 3.2 | VIII | FACTORISATION | 2 |
| 12 | 3.3 | VIII | FACTORISATION | 2 |
| 13 | 3.4 | VIII | FACTORISATION | 2 |
| 14 | 4.1 | VIII | FACTORISATION | 2 |
| 15 | 4.2 | VIII | FACTORISATION | 3 |
| 16 | 4.3 | VIII | FACTORISATION | 2 |
| 17 | 4.4 | VIII | FACTORISATION | 2 |
| 18 | 5.1 | VIII | FACTORISATION | 2 |
| 19 | 5.2 | VIII | FACTORISATION | 2 |
| 20 | 5.3 | VIII | FACTORISATION | 1 |
| 21 | 5.4 | VIII | FACTORISATION | 1 |
| 22 | 5.5 | VIII | FACTORISATION | 1 |
| 23 | 6.1 | VIII | FACTORISATION | 3 |
| 24 | 6.2 | VIII | FACTORISATION | 1 |
| 25 | 6.3 | VIII | FACTORISATION | 2 |
| 26 | 7.1 | VIII | FACTORISATION | 3 |
| 27 | 7.2 | VIII | FACTORISATION | 3 |
| 28 | 7.3 | VIII | FACTORISATION | 2 |
| 29 | 7.4 | VIII | FACTORISATION | 2 |
| 30 | 7.5 | VIII | FACTORISATION | 1 |
| 31 | 8.1 | VIII | FACTORISATION | 4 |
| 32 | 8.2 | VIII | FACTORISATION | 3 |
| 33 | 8.3 | VIII | FACTORISATION | 1 |
| 34 | 8.4 | VIII | FACTORISATION | 1 |
| 35 | 8.5 | VIII | FACTORISATION | 1 |
| 36 | 9.1 | VIII | FACTORISATION | 2 |
| 37 | 9.2 | VIII | FACTORISATION | 3 |
| **S. No.** | **TEST ITEM NO.** | **CLASS** | **CHAPTER** | **PROFICIENCY LEVEL** |
| 38 | 9.3 | VIII | FACTORISATION | 2 |
| 39 | 10.1 | VIII | FACTORISATION | 2 |
| 40 | 10.2 | VIII | FACTORISATION | 3 |
| 41 | 10.3 | VIII | FACTORISATION | 2 |
| 42 | 10.4 | VIII | FACTORISATION | 2 |
| 43 | 10.5 | VIII | FACTORISATION | 2 |
| 44 | 11.1 | VIII | FACTORISATION | 3 |
| 45 | 11.2 | VIII | FACTORISATION | 3 |
| 46 | 11.3 | VIII | FACTORISATION | 3 |
| 47 | 11.4 | VIII | FACTORISATION | 2 |
| 48 | 11.5 | VIII | FACTORISATION | 2 |
| 49 | 12.1 | VIII | FACTORISATION | 3 |
| 50 | 12.2 | VIII | FACTORISATION | 2 |
| 51 | 12.3 | VIII | FACTORISATION | 2 |
| 52 | 12.4 | VIII | FACTORISATION | 3 |
| 53 | 13.1 | VIII | FACTORISATION | 1 |
| 54 | 13.2 | VIII | FACTORISATION | 4 |
| 55 | 13.3 | VIII | FACTORISATION | 3 |
| 56 | 13.4 | VIII | FACTORISATION | 2 |
| 57 | 13.5 | VIII | FACTORISATION | 3 |

**TEST ITEM 1.1**

**JUICY WATERMELONS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the degree and type of algebraic expressions. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | * 1. Simple multiple choice |
| Cognitive process | Formulating |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 1.1 Full credit ( b) quadratic No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 1.2 JUICY WATERMELONS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the finding the factors by splitting of middle term or applying identity. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Reproduction |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | * 1. Closed constructed response |
| Cognitive process | Interpreting , problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 1.2 Full credit l= 2x+6, b = x+3  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 1.3 JUICY WATERMELONS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the finding the perimeter of the rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Reproduction |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | * 1. Closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 1.3 Full credit perimeter = 6x + 18  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 1.4 JUICY WATERMELONS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the finding the volume of the cube if formula is given. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Reproduction |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | * 1. Closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 1.4 Full credit V = x 3 + 9 x 2 + 27 x + 27  Partial credit :- V = ( x + 3 ) 3  No credit :- Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 1.5 JUICY WATERMELONS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the degree of the algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Reproduction |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | * 1. Simple MCQ |
| Cognitive process | employing |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 1.5 Full credit :- (d) 3  No credit :- Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 2.1 AN OLD MAN’S WISH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the types of expressions. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 2.1 Simple multiple choice |
| Cognitive process | formulating |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 2.1 Full credit ( b) binomial No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 2.2 AN OLD MAN’S WISH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the types of expressions and its related terms. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 2.2 Simple multiple choice |
| Cognitive process | employing |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 2.2 Full credit ( b) 5 No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 2.3 AN OLD MAN’S WISH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 3 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of how to avoid wrong concepts in the product of binomials. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 2.3 closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 2.3 Full credit Jim’s solution is correct. (for all correct steps)  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 3.1 A CARPETTED FLOOR**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of how to find area of square. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | reproduction |
| Overarching Idea | Space and shape |
| Context | personal |
| Item Format | 3.1 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 3.1 Full credit :- 16 p 2 + 48 p + 36  Partial credit :- (4p + 6) 2  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 3.2 A CARPETTED FLOOR**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of how to find area of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | reproduction |
| Overarching Idea | Space and shape |
| Context | Personal |
| Item Format | 3.2 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 3.2 Full credit :- 12 p 2 + 48 p + 45  Partial credit :- (6p + 9) (2p + 5)  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 3.3 A CARPETTED FLOOR**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of how to subtract algebraic expressions. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | reproduction |
| Overarching Idea | Space and shape |
| Context | personal |
| Item Format | 3.3 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 3.3 Full credit :- 4 p 2 - 9  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 3.4 A CARPETTED FLOOR**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 3 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of how to factorise using identity. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | reproduction |
| Overarching Idea | Space and shape |
| Context | personal |
| Item Format | 3.4 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 3.4 Full credit :- (2 p + 3 ) ( 2p – 3 )  No credit Other responses and missing |

Name of the Teacher/Item Writer: Jayashree Agasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 4.1 JOGGING FOR GOOD HEALTH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of degree of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 4.1 simple MCQ |
| Cognitive process | formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 4.1 Full credit :- (c) 4  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 4.2 JOGGING FOR GOOD HEALTH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of degree of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Reproduction |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 4.2 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 4.2 Full credit :- 44 x 2 (x – 8 ) (x + 3 )  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: Jayashree Agasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 4.3 JOGGING FOR GOOD HEALTH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 3 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of division of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 4.3 closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 4.3 Full credit :- 4 x ( x + 3 )  Partial credit :- if some steps are correct but didn’t reach correct answer  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 4.4 JOGGING FOR GOOD HEALTH**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :-FACTORISATION | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of their health and benefits of jogging. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Interpretation |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 4.4 open constructed response |
| Cognitive process | interpreting |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 4.4 Full credit :- Fresh air, good health, good exercise.  No credit Other responses and missing |

Name of the Teacher/Item Writer: JayashreeAgasti

Designation: TGT Mathematics

Email: jayuagasti@gmail.com

Phone No.:9926412336

Name of the Vidyalaya: K. V. Mhow

KVS Region: Bhopal

**TEST ITEM 5.1 QUIZ COMPITITION**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME FACTORIZATION | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the factorisation of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 5.1 closed constructed. |
| Cognitive process | Interpreting |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 5.1 Full credit: X2-11X+28=0 No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 5.2 QUIZ COMPITITION**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME FACTORIZATION | CLASS :- VIII  EXPECTED TIME :- 3 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the factorisation of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 5.2  Short term response |
| Cognitive process | Mathematical concepts |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 5.2 Full credit : ( x-7) ( x-4) = 0  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 5.3 QUIZ COMPITITION**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME FACTORIZATION | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the Factorization |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | quantity |
| Context | Societal |
| Item Format | 5.3 short term response |
| Cognitive process | Interpreting |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 5.3 Full credit : both round got equal points No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 5.4 QUIZ COMPITITION**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME FACTORIZATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware the concept of factorization. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | quantity |
| Context | Societal |
| Item Format | 5.4 closed constructed |
| Cognitive process | problem solving interpreting |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 5.4 Full credit : yes No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 5.5 QUIZ COMPITITION**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME FACTORIZATION | CLASS :- VIII  EXPECTED TIME :- 1 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware to solving the expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | quantity |
| Context | Societal |
| Item Format | 5.5 Short term response |
| Cognitive process | Problem solving, interpreting |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 5.5 Full credit : 10 or 11 No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 6.1MATHS GAME**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorisation | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 3 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about the factorization of algebraic expressions. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape , quantity |
| Context | Societal |
| Item Format | 6.1 Short term response |
| Cognitive process | Interpreting |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:3 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| 6.1 Full credit : Rani No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 6.2 MATHS GAME**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | The students aware to solving the expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 6.2 Closed constructed |
| Cognitive process | Interpreting |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| 6.2 Full credit : yes No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 6.3 MATHS GAME**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | Students aware about the concepts of the factorization |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 6.3 Open response |
| Cognitive process | Interpreting |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 6.3 Full credit: Rahim and John No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 7.1 THE VILLAGE**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 3 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware the area of rectangle |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 7.1 Closed constructed response |
| Cognitive process | formulating |
| Proficiency level | 4 |

**Credit Pattern:**

Full Credit:3 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 7.1 Full credit: let the breadth be x then length will be x + 2, area of rectangle = l×b  = 48=(x+2) × (x)  = x²+2x -48 =0  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 7.2 THE VILLAGE**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 3 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about the factorization of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 7.2 Closed constructed response |
| Cognitive process | Mathematical concepts |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:3 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 7.2 Full credit: x²+2x -48=0  x² +(8-6)x-48 =0  ( x+8) (x-6) =0  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 7.3 THE VILLAGE**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about the dimension of the rectangle |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change in relationship |
| Context | Societal |
| Item Format | 7.3 Closed constructed response |
| Cognitive process | Mathematical concept |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWERS 7.3 Full credit: length = 8m , breadth = 6m  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 7.4THE VILLAGE**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 3 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about the perimeter of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 7.4 Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 4 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER 7.4 Full credit: Perimeter = 2 (l+b)  = 28m  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 7.5THE VILLAGE**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about the cost price of fencing. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 7.5 Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER 7.5 Full credit: cost of fencing = perimeter × rate  = Rs.560  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 8.1GRAM PUNCHAYAT**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 6 MIN  TOTAL CREDIT :- 4 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the factorization of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 8.1 Closed constructed response |
| Cognitive process | Mathematical concepts |
| Proficiency level | 4 |

**Credit Pattern:**

Full Credit: 4 Partial Credit: 2 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER 8.1 Full credit: Perimeter = 2×(l+b)  80/2 = (l+b)  l = 40 – b  Area = l × b  400 = (40-b)×b  b²- 40b + 400 = 0  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 8.2GRAM PUNCHAYAT**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | Theme: Factorization | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 3 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware factorization of of algebraic expression |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 8.2 Closed constructed response |
| Cognitive process | Mathematical concepts |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit: 3 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER 8.2 Full credit: x²-40x+400=0  X²-(20+20)x+400=0  (x-20) (x-20) =0  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 8.3GRAM PUNCHAYAT**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware about thearea rectangle |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 8.3 Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit: 1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| Answer 8.3 Full credit : length = 20m  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 8.4 GRAM PUNCHAYAT**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make students aware about the dimension of the rectangle |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Quantity |
| Context | Societal |
| Item Format | 8.4 Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit: 1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER 8.4 Full credit: breadth = 20m  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 8.5 GRAM PUNCHAYAT**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- Factorization | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 1 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the factorization of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 8.5 Short term response |
| Cognitive process | Mathematical concept |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit: 1 Partial Credit: 0 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| Answer 8.5 Full credit: yes , both are equal  No credit Other responses and missing |

Name of the Teacher/Item Writer: SHYAM PAD GOLDAR

Designation: TGT Mathematics

Email: shyampadgoldar@gmail.com

Phone No.:8982741857

Name of the Vidyalaya: K. V. HOSHANGABAD

KVS Region: Bhopal

**TEST ITEM 9.1 THREE FRIENDS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of division of polynomials. |

Mathematical Literacy

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Simple multiple choice |
| Cognitive process | Employing mathematical concept |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 9.1 Full credit : c (Roy)  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 9.2 THREE FRIENDS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of division of polynomials. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Employing mathematical concept |
| Proficiency level | 3 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 9.2 Full credit :While dividing a polynomial by a monomial, we divide each term of the polynomial in the numerator by the monomial in the denominator.  No credit Other responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 9.3 THREE FRIENDS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 5 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of division of polynomials. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Employing mathematical concept |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS Full credit : John and Den  No credit : Other responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 10.1 IRONY OF TWO GENIUS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of use of identities. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 10.1 Full credit :Dazy  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 10.2 IRONY OF TWO GENIUS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of use of identities. |

Mathematical Literacy

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Interpreting |
| Proficiency level | 3 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 10.2 Full credit : Make sure before, applying algebraic identities, whether the identities is really applicable.  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 10.3 IRONY OF TWO GENIUS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THEERROR | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of algebraic identities. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 10.3 Full credit : a2-2ab+b2  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 10.4 IRONY OF TWO GENIUS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of algebraic identities. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 10.4 Full credit : a2+2ab+b2  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 10.5 IRONY OF TWO GENIUS**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FIND THE ERROR | CLASS :- VIII  EXPECTED TIME :- 2 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the concepts of algebraic identities. |

**Mathematical Literacy**

|  |  |
| --- | --- |
| **FRAMEWORK** | **CHARACTERISTICS** |
| Competency Cluster | Connection |
| Overarching Idea | Change and relationship |
| Context | Scientific |
| Item Format | Closed constructed response |
| Cognitive process | Formulating |
| Proficiency level | 2 |

Credit Pattern:

Full Credit: 2 Partial Credit: 1 No Credit: 0

Description of Answer Key and Credits:

|  |
| --- |
| ANSWERS 10.5 Full credit : a2-b2  No creditOther responses and missing |

Name of the Teacher/Item Writer: Binod kumar

Designation: TGT Mathematics

Email: binodprajapati1981@gmail.com

Phone No.:9340880348

Name of the Vidyalaya: K. V. Sarni

KVS Region: Bhopal

**TEST ITEM 11.1 RECTANGULAR FIELD**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the Factorization of algebraic expression by identities and splitting the middle terms and properties of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 11.1 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 11.1 Full credit : Length= **(x-3)** unit Breadth = **(x-4)** unit  Partial credit : if any one value is correct but another is wrong  No credit : Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 11.2 RECTANGULAR FIELD**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the properties of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 11.2 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 11.2 Full credit: Perimeter = 2(l+b) = 2(x-3+x-4) =**(4x-14**) unit  Partial credit : if formula is applied correctly but answer is wrong  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 11.3 RECTANGULAR FIELD**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the properties of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 11.3 Short response item |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 11.3 Full credit: Length of diagonal= **5** unit  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 11.4 RECTANGULAR FIELD**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the properties of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 11.4 Short response item |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 11. 4 Full credit: Area = **12**sq. unit  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 11.5 RECTANGULAR FIELD**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of finding the perimeter of rectangle. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 11.5 Short response item |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 11.5 Full credit: Perimeter= **14** unit  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 12.1 AGE PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of forming an equation from the given information |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 12.1 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 12.1Full credit : **2x2+5x-900=0**  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 12.2 AGE PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the Factorization of algebraic expression by identities . |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 12.2 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 12.2 Full credit:2x2+5x-900=0  =>2x2+45x-40x-900=0  =>(2x+45) (x-20)=0  =>**x=20** Kate is 20 years old.  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 12.3 AGE PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of solving word problems. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | personal |
| Item Format | 12.3 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 12. 3 Full credit:Kate’s father’s age= (2x+5)yrs = **45 years**  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 12.4 AGE PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of ratios. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Change and relationship |
| Context | Societal |
| Item Format | 12.4 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 12. 4 Full credit:Kate: Father= **4:9**  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 13.1 COMMERCIAL PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the degree of algebraic expression. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| I  tem Format | 13.1 Simple multiple choice |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 1 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 13. 1 Full credit:(c) **cubic**  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 13.2 COMMERCIAL PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the Factorization of algebraic expression by identities and regrouping the terms. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 13.2 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 4 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 13. 2 Full credit: => P(x) =x3+3x2-4x-12  => x2(x+3)-4(x+3) =>(x2-4) (x+3) = (x-2) (x+2) (x+3)  Share factors are **(x-2), (x+2) & (x+3)**  Partial credit : If one or two values are correct but third is wrong  No credit : Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal

**TEST ITEM 13.3COMMERCIAL PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the comparing of the quantities. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 13.3 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 13. 3. Full credit: Maximum shares are **(x+3)**   No credit :Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

Name of the Vidyalaya: KV No. 2 Indore

KVS Region: Bhopal**TEST ITEM 13.4 COMMERCIAL PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the values of algebraic expression on a particular point. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 13.4 short response item |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 2 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 13. 4. Full credit :Shares are= **3, 7 & 8**  Partial credit: if 2 values are correct but third is wrong  No credit: Other responses and missing |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232

**TEST ITEM 13.5 COMMERCIAL PROBLEM**

|  |  |  |
| --- | --- | --- |
| DOMAIN : - MATHEMATICAL LITERACY | THEME :- FACTORISATION | CLASS :-VIII  EXPECTED TIME :- 4 MIN  TOTAL CREDIT :- 2 |
| DESCRIPTION OF ITEM  TEXT AND IMAGE | LEARNING OUTCOMES :- | To make the students aware of the average. |

**MATHEMATICAL LITERACY**

|  |  |
| --- | --- |
| FRAMEWORK | CHARACTERISTICS |
| Competency Cluster | Connections |
| Overarching Idea | Space and shape |
| Context | Societal |
| Item Format | 13.5 Closed constructed response |
| Cognitive process | Interpreting, problem solving. |
| Proficiency level | 3 |

**Credit Pattern:**

Full Credit:2 Partial Credit: 1 No Credit: 0

**Description of Answer Key and Credits:**

|  |
| --- |
| ANSWER- 13. 5 Full credit: Average share= (3+7+8)/3= **6**  No credit: other responses and missing. |

Name of the Teacher: C.L. Joshi

Designation: PGT Mathematics

Email: [cljoshipin@gmail.com](mailto:cljoshipin@gmail.com)

Phone No. : 9826985232