





MATHS

BOOKS - SWAN PUBLICATION

ALGEBRA



1. Find the rule which gives the number of matchsticks required to make the following 'n' matchstick patterus. Use a variables to write

the rule :

A pattern of letter T as



2. Find the rule which gives the number of matchsticks required to make the following 'n' matchstick patterus. Use a variables to write the rule :





3. Find the rule which gives the number of matchsticks required to make the following 'n' matchstick patterus. Use a variables to write the rule :



A pattern of letter F as

4. Find the rule which gives the number of matchsticks required to make the following 'n' matchstick patterus. Use a variables to write the rule :



5. Find the rule which gives the number of matchsticks required to make the following 'n' matchstick patterns. Use a variables to write the rule :





6. Students are sitting in rows. There are 12 students in a row. What is the rule which gives the number of students in 'n' rows ? (Represent by table)

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7. The teacher distributes 3 pencils to a student. What is the rule which gives the

number of pencils, if there are 'a' number of

students ?



8. There are 8 pens in a pen stand. What is the rule that gives the total cost of the pens, If the cost of each pen is represented by a variable

'c' ?

9. Gurleen is drawing pictures by joining dots. To make one picture, she has to join 5 dots. Find the rule that gives the number of dots, if the number of pictures is represented by the symbol 'p'.

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10. Look at the following matchsticks patterns of square given below. The squares are not separate as there are two adjoined adjacent squares have common match stick. Observe the patterns and find the rule that gives the number of matchsticks in terms of the number of squares.







1. Each side of equilateral triangle is denoted by 'a' then express the perimeter of the triangle using 'a'.





2. An isosceles triangle is shown. Express its

perimeter in terms of 'l' and 'b'.



3. Each side of regular hexagon is denoted by

'S' then experss the perimeter of the regular

hexagon using 'S'.



4. The cube has 6 faces and all of them are identify squares. If I is the length of an edge of a cube, find the length of all edges of the cube in terms of 'l'.





6. Write associative property of multiplication

using variables I, m and n.

7. Write distributive property of multiplication over addition in terms of variables p, q and r respectively.



Exercise 7 3

1. Pick the algebraic expressions and the arithmetic expressions from the following :







2. Pick the algebraic expressions and the arithmetic expressions from the following :

5 imes 3+8

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3. Pick the algebraic expressions and the arithmetic expressions from the following :

6x - 3

4. Pick the algebraic expressions and the arithmetic expressions from the following :

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5. Pick the algebraic expressions and the arithmetic expressions from the following :

2 imes(21-18)+9

6. Pick the algebraic expressions and the arithmetic expressions from the following :

$$\frac{6a}{5}+2$$



7. Pick the algebraic expressions and the arithmetic expressions from the following :

$$7 imes 20 \div 5 + 3$$

8. Pick the algebraic expressions and the arithmetic expressions from the following :
8
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9. Write the terms for the following expressions :

2y + 5z

10. Write the terms for the following expressions :

2y + 5z

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11. Identify the coefficients of the terms of the

following expressions

a + b + 5

12. Write the terms for the following expressions :

3l-5m+2n

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13. Write the terms for the following

expressions :

$$rac{2l}{3} + x$$

14. Tell how the following expressions are formed.

a + 11



15. Tell how the following expressions are formed.

a + 11

16. Tell how the following expressions are formed.

3z + 8

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17. Tell how the following expressions are formed.

6-5l



5 is subtracted from y

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21. Give expressions for the following :

d is divided by 3

l is multiplied by -6

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23. Give expressions for the following :

m is subtracted from 1

11 is added to 3x

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25. Give expressions for the following :

y is multiplied by -2 and then 2 is added to the

result

c is divided by 5 then 7 is multiplied to the

result



27. Give expressions for the following :

x is multiplied by 3 then subtracted this result

from y

a is added to b then c is multiplied with this result



29. Write the number which is 15 less than y.

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30. Write the number which is 3 more than a.





31. Find the number which is 1 more than twice

of x.



32. Find the number which is 7 less than 5

times of y.

33. Somi's present age is 'a' years. Express the

following in algebraic form :

Her age after 15 years.

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34. Somi's present age is 'a' years. Express the

following in algebraic form :

Her age 2 years ago.

35. Somi's present age is 'a' years. Express the

following in algebraic form :

If somi's father's age is 5 more than twice of

her present age, express her father's age.



36. Somi's present age is 'a' years. Express the

following in algebraic form :

If Somi's sister is 4 years younger to her.

Express her sister's age.



37. Somi's present age is 'a' years. Express the

following in algebraic form :

If Somi's mother is 3 less than 3 times her

present age. Express her mother's age.

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38. The length of a floor is 10 more than two times of breadth. What is the length if breadth is l metres ?

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Exercise 7 4

1. Write the following statements as algebraic

equations :

The sum of x and 3 gives 10.



2. Write the following statements as algebraic

equations :

5 less than a number 'a' is 12.



3. Write the following statements as algebraic

equations :

2 more than 5 times of p gives 32.

4. Write the following statements as algebraic

equations :

Half of a number is 10.

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5. Write the following statements as algebraic

equations :

Twice of a number added to 3 gives 17.

6. Write the LHS and RHS for the following equations :

x + 5 = 8

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7. Write the LHS and RHS for the following equations :

13 = 2m + 3

8. Write the LHS and RHS for the following equations :
x + 5 = 8



9. Write the LHS and RHS for the following equations :

x + 5 = 8

10. Write the LHS and RHS for the following

equations :

$$\frac{5x}{7} = 15$$



11. Solve the following equations by trial and error method :

x + 2 = 7

12. Solve the following equations by trial and

error method :

5p = 20

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13. Solve the following equations by trial and error method :

$$rac{a}{5}=2$$

14. Solve the following equations by trial and

error method :

21 - 4 = 8



15. Solve the following equations by trial and error method :

3x + 2 = 11

16. Solve the following equations by systematic method.

z - 4 = 10

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17. Solve the following equations by systematic

method.

a + 3 = 15

18. Solve the following equations by systematic

method.

4m = 20

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19. Solve the following equations by systematic method.

3x - 3 = 15



22. Solve the following equation by transposition : y + 2 = 3Watch Video Solution **23.** Solve the following equation by transposition : 5x = 10Watch Video Solution

transposition :

$$\frac{a}{6} = 4$$

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25. Solve the following equation by transposition :

4y - 2 = 30





27. Solve the following equations :

x - 3 = 15



x - 2 = 13

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29. Solve the following equations :

6x = 18



3x = 24



31. Solve the following equations :

$$\frac{x}{4} = 7$$



$$rac{x}{4} = 7$$



33. Solve the following equations :

2x - 5 = 17



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35. Solve the following equations :

5x - 2 = 13

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Multiple Choice Questions

1. If side of a square is denoted by x then its perimeter will be.....

A. 4 + s

B.s-4

C. 4s

D. s

Answer: C

2. Write commutative property of addition using variables x and y.

$$B. x + y = y + x$$

C. x + y

D. xy

Answer: A

3. How much terms in expression 71 - 3?

A. 1

B. 3

C. 2

D. 4

Answer: C



4. 5 is subtracted from m =:

A. 5 - m

B. m + 5

C. 5 + m

D. m - 5

Answer: D

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5. Multiply p by 3 then 2 is added =

A. 2p + 3

B. 3p - 2

C. 3p + 2

D. 2p - 3

Answer: C

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6. If Armaan's present age is x years then what

will be his age after 4 years ?

B. x + 4

C. 4x

D. 4 - x

Answer: B

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7. Write as algebraic equation : 7 more than 4

times of y gives 23.

A.
$$4 + 7y = 23$$

B. 7 + y = 23

D. 4y + 7 = 23

Answer: D

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8. Find x if x - 3 = 2

A. 3

C. 5

D. 2

Answer: C



9. Solve, 41 - 3 = 5

A. 3

B. 4

C. 1

D. 2

Answer: D

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10. If
$$\displaystyle rac{a}{4} = 5$$
 then a =

B. 20

C. 4



