

Name .....

Class ..... Section ..... Roll No. ....

# MATHEMATICS

## PART-7

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# WORKSHEET 1



## Operations on Integers

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The value of  $|-3| + |-1| + |-7|$  is  
 (a) -7 (b) 5 (c) -1 (d) 11
- (ii) The value of  $2^2 \times (-3)^3 \times (-1)^3$  is  
 (a) -72 (b) 72 (c) 108 (d) -108
- (iii) On subtracting 15 from -5, we get  
 (a) 10 (b) -10 (c) -20 (d) 20

### 2. Find the sum :

- (i) -15 and -7  (ii) 13 and -13  (iii) -25 and 15
- (iv) -11 and 5  (v) 12 and -33

### 3. Subtract :

- (i) -11 from -7  (ii) -3 from 9  (iii) -6 from 7
- (iv) -42 from -32  (v) -71 from -66  (vi) -7 from 9

### 4. Simplify :

- (i)  $|-9| + |-1|$   (ii)  $-|21| + |21|$

### 5. Simplify :

- (i)  $(-5)^6$   (ii)  $(-3)^2 \times (-2)^2 \times (-1)^3$
- (iii)  $(-4)^2 \times (-10)^4$   (iv)  $(-1)^9 \times (-1)^{53} \times (-1)^6$
- (v)  $(-2)^4$   (vi)  $(-3)^5$

### 6. Simplify :

- (i)  $5 \times [25 + \{(-4) \times (16 - 8 \div 2)\}]$
- (ii)  $(11 - 5) \times [12 + \{3 + \overline{11 - 14}\}]$

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# WORKSHEET 2

DATE : .....

## Multiplication and Division of Integers

### 1. Choose the correct option. (MCQ's)

- (i)  $(40) \div 0 = ?$   
(a) 40                      (b) 0                      (c) not defined                      (d) - 40
- (ii) The group of integers, whose product is - 42, is  
(a) (- 6, - 7, - 1)    (b) (7, - 6)                      (c) (6, 7, - 1)                      (d) All of these

### 2. Multiply :

- (i)  $2 \times (-3)$                        (ii)  $4 \times (-5)$                        (iii)  $-8 \times 2$

### 3. Multiply :

- (i)  $(-1) \times (-6)$                        (ii)  $-4 \times (-5)$                        (iii)  $-2 \times (-1)$

### 4. Find the product of :

- (i) 6 and - 12                       (ii) - 15 and - 15                       (iii) 0 and - 61
- (iv) 3, 5, - 7 and - 1                       (v) 0 and 0

### 5. Find the product of the following integers :

- (i)  $(-27) \times (-2)$                        (ii)  $(-250) \times (-10)$                        (iii)  $-1 \times (-1)$
- (iv)  $-1 \times (-879)$                        (v)  $1 \times (-2) \times 9$
- (vi)  $(-5) \times (-11) \times (-4)$                        (vii)  $(-5) \times (-4) \times (10) \times (-1)$

### 6. Divide :

- (i) - 120 by - 6                       (ii) - 58 by - 2
- (iii) 1312 by - 41                       (iv) 1920 by - 8

### 7. Find the value :

- (i)  $-96 \div (-24)$                        (ii)  $-150 \div 30$                        (iii)  $56 \div (-7)$
- (iv)  $210 \div (-30)$                        (v)  $-1476 \div 123$

Teacher's Signature : .....



# WORKSHEET 3



## Properties of Integers

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The closure property does not hold good in integers for  
 (a) addition (b) multiplication (c) subtraction (d) division
- (ii) In integers, 1 is the identity for  
 (a) multiplication (b) division (c) subtraction (d) addition

### 2. Which of the following statements is/are 'True' or 'False' ?

- (i)  $-2 \times (-3) = (-3) \times (-2)$   (ii)  $25 \times 0 = 25$
- (iii)  $5 \times [4 + (-6)] = 5 \times 4 - (5) \times (-6)$   (iv)  $-11 \times 1 = 11$
- (v)  $-9 \times 2 = 2 \times (-9)$

### 3. Find the product of the following using some quicker groupings :

- (i)  $235 \times 99 + 235 \times 1$
- (ii)  $65 \times 11 + 65 \times (-11)$
- (iii)  $27 \times (-8) + 27 \times (-10)$

### 4. Verify whether the following is/are 'True' or 'False' :

- (i)  $-13 \div (-1) = -13$   (ii)  $-51 \div 0 = 0$
- (iii)  $0 \div (-238) = -238$   (iv)  $65 \div (-65) = -1$

### 5. Find x in the following :

- (i)  $5 \times [(-6) + x] = 5 \times (-6) + 5 \times 10$
- (ii)  $9 \times [(-7) + 3] = (9) \times x + (9) \times 3$
- (iii)  $x \times [7 + (-8)] = 15 \times 7 + (-8) \times 15$
- (iv)  $-10 \times [-5 + x] = -10 \times (-5) + (-10) \times 7$
- (v)  $7 \times [4 + (-2)] = -8 \times 4 + 8 \times x$
- (vi)  $8 \times [(6) + (-5)] = x \times (6) + x \times (-5)$

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DATE : .....

## Multiplication and Division of Fractions

### 1. Choose the correct option. (MCQ's)

- (i) If the cost of  $1\frac{1}{3}$  kg onions is ₹ 20, how much will  $5\frac{2}{3}$  kg onions cost ?  
 (a) ₹ 78                      (b) ₹ 85                      (c) ₹ 72                      (d) ₹ 80
- (ii) The product of  $\frac{54}{21}$ ,  $2\frac{3}{4}$  and  $1\frac{2}{5}$  is  
 (a)  $9\frac{9}{10}$                       (b)  $5\frac{9}{10}$                       (c)  $4\frac{9}{10}$                       (d)  $\frac{86}{10}$
- (iii) The value of  $\frac{9}{24} \times \frac{2}{5} \div \frac{9}{12}$  is  
 (a)  $\frac{9}{80}$                       (b)  $\frac{45}{64}$                       (c)  $\frac{1}{5}$                       (d)  $\frac{4}{5}$
- (iv)  $\frac{40}{3}$  litres cold drink is being distributed equally among 20 persons. How much milk would one person get ?  
 (a)  $\frac{1}{3}l$                       (b)  $\frac{4}{3}l$                       (c)  $\frac{2}{3}l$                       (d)  $\frac{2}{3}ml$

### 2. Simplify :

(i)  $\frac{15}{35} \times \frac{49}{54} \div \frac{1}{2}$

(ii)  $\frac{8}{25} \times 2\frac{1}{2} \div 2\frac{1}{11} \times \frac{4}{9}$

### 3. Find :

(i)  $\frac{21}{24} \times 6$

(ii)  $\frac{3}{4} \times \frac{5}{8}$

(iii)  $\frac{1}{2}$  of 12 m

(iv) one-tenth of  $\frac{330}{51}$

### 4. Divide :

(i)  $\frac{14}{32}$  by  $\frac{21}{16}$

(ii)  $\frac{5}{6}$  by  $4\frac{2}{3}$

(iii)  $1\frac{2}{6}$  by  $2\frac{1}{3}$

(iv)  $19\frac{5}{7}$  by  $\frac{138}{7}$

Teacher's Signature : .....

1. Choose the correct option. (MCQ's)

- (i) Which of the following is a rational number ?  
(a)  $-2$  (b)  $5$  (c)  $\frac{-2}{5}$  (d) All of these
- (ii) A rational number equivalent to  $\frac{6}{-7}$  with numerator  $-6$  is  
(a)  $\frac{-6}{7}$  (b)  $\frac{-6}{-7}$  (c)  $\frac{-6}{14}$  (d)  $\frac{-6}{-14}$
- (iii) An equivalent rational number of  $\frac{-8}{11}$  with denominator  $-55$  is  
(a)  $\frac{36}{-55}$  (b)  $\frac{32}{-55}$  (c)  $\frac{40}{-55}$  (d)  $\frac{45}{-55}$

2. Answer in 'Yes' or 'No' for each of the following :

- (i) Is every natural number a rational number ?  
(ii) Is every integer a rational number ?  
(iii) Is every rational number an integer ?  
(iv) Is every fraction a rational number ?  
(v) Is zero a rational number ?


3. Rewrite the following rational numbers with positive denominators :

- (i)  $\frac{-10}{-12}$   (ii)  $\frac{+6}{-15}$   (iii)  $\frac{8}{-5}$

4. Fill in the blanks :

- (i)  $\frac{-4}{7} = \frac{\text{ }}{14} = \frac{\text{ }}{35} = \frac{\text{ }}{77}$  (ii)  $\frac{3}{\text{ }} = \frac{18}{-30} = \frac{\text{ }}{-20} = \frac{15}{\text{ }}$   
(iii)  $\frac{2}{9} = \frac{\text{ }}{45} = \frac{14}{\text{ }} = \frac{\text{ }}{54}$  (iv)  $\frac{\text{ }}{6} = \frac{-15}{18} = \frac{\text{ }}{36} = \frac{\text{ }}{54}$

5. Rewrite each of the following with denominator as 64 :

- (i)  $\frac{-3}{16}$   (ii)  $\frac{5}{8}$   (iii)  $\frac{-6}{4}$   (iv)  $\frac{-7}{32}$

Teacher's Signature : .....



# WORKSHEET 6

DATE : .....

## Comparison of Rational Numbers

1. Write 'true' or 'false' for each of the following :

- (i) Every positive rational number is greater than zero.
- (ii) Zero is greater than every negative rational number.
- (iii) The rational number  $\frac{1}{3}$  lies to the left of the rational number  $\frac{-1}{3}$ .
- (iv) The rational number  $\frac{-18}{-23}$  lies to the left of zero on the number line.
- (v) We can find infinite rational numbers between  $-1$  and  $0$ .
- (vi)  $-5$  is greater than  $-1$ .

2. Fill in the  with correct symbol using  $>$  ,  $<$  or  $=$  :

- (i)  $\frac{5}{-7}$    $\frac{-5}{8}$     (ii)  $\frac{-10}{11}$    $\frac{5}{8}$     (iii)  $\frac{7}{8}$    $\frac{7}{12}$     (iv)  $\frac{7}{-8}$    $\frac{-6}{13}$
- (v)  $\frac{-10}{7}$    $\frac{-6}{11}$     (vi)  $\frac{-7}{4}$    $\frac{4}{7}$     (vii)  $\frac{-9}{11}$    $\frac{-81}{99}$

3. Which rational number in each of the following pairs is greater ?

- (i)  $\frac{3}{7}, \frac{1}{7}$      (ii)  $\frac{-9}{5}, 0$      (iii)  $\frac{-1}{3}, \frac{-3}{1}$      (iv)  $0, \frac{2}{3}$

4. Which rational number in each of the following pairs is smaller ?

- (i)  $\frac{-3}{-7}, \frac{-5}{8}$      (ii)  $\frac{1}{4}, \frac{-1}{2}$      (iii)  $-1, \frac{-1}{4}$      (iv)  $\frac{-1}{2}, \frac{-1}{6}$

5. Arrange the following rational numbers in ascending order :

- (i)  $\frac{-10}{15}, \frac{1}{2}, \frac{-12}{10}$  .....
- (ii)  $0, -2, \frac{-1}{2}$  .....
- (iii)  $\frac{3}{2}, \frac{-3}{2}, -2, 2$  .....
- (iv)  $\frac{7}{-10}, \frac{-3}{5}, \frac{5}{-6}$  .....

6. Arrange the following rational numbers in descending order :

- (i)  $\frac{5}{8}, \frac{-2}{3}, \frac{2}{-5}$  .....
- (ii)  $\frac{-13}{15}, \frac{-5}{3}, \frac{2}{-5}$  .....
- (iii)  $\frac{-3}{5}, \frac{7}{11}, \frac{-2}{3}$  .....
- (iv)  $\frac{1}{3}, \frac{7}{-3}, \frac{-13}{5}, -2$  .....

Teacher's Signature : .....



# WORKSHEET 7



## Operations on Rational Numbers

DATE : .....

### 1. Choose the correct option. (MCQ's)

(i) The sum of  $\frac{11}{18}$ ,  $\frac{-4}{9}$  and  $\frac{-5}{12}$  is

(a)  $\frac{-5}{9}$

(b)  $\frac{-1}{9}$

(c)  $\frac{3}{4}$

(d)  $\frac{-1}{4}$

(ii) What should be added to  $\frac{-5}{8}$  to get  $\frac{2}{9}$  ?

(a)  $\frac{61}{72}$

(b)  $\frac{2}{9}$

(c)  $\frac{-3}{8}$

(d)  $\frac{13}{36}$

(iii) On subtracting the sum of  $\frac{1}{3}$  and  $\frac{-2}{3}$  from that of  $\frac{-4}{3}$  and  $\frac{5}{3}$ , the difference is

(a)  $\frac{-1}{18}$

(b)  $\frac{-1}{3}$

(c)  $\frac{2}{3}$

(d)  $\frac{1}{3}$

### 2. Fill in the blanks :

(i) The sum of two rational numbers is always a ..... number.

(ii) Three or more rational numbers can be added by grouping them in ..... order.

(iii) The difference of two rational numbers is a ..... number.

(iv) ..... is called the identity element for addition of rational numbers.

(v) The sum of any rational number and ..... is the rational number itself.

3. What should be subtracted from  $\frac{2}{7}$  to get  $\frac{2}{7}$  ?

4. What should be subtracted from  $\frac{4}{5}$  to get  $\frac{4}{5}$  ?

5. What should be added to  $\frac{-11}{7}$  to get 0 ?

### 6. Find the sum of the following rational numbers :

(i)  $\frac{3}{5}$  and  $\frac{4}{5}$

(ii)  $\frac{-4}{5}$  and  $\frac{-3}{5}$

### 7. Find the sum of :

(i)  $\frac{-2}{5}$  and  $\frac{7}{4}$

(ii)  $\frac{5}{8}$  and  $\frac{-3}{4}$

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DATE : .....

## Multiplication and Division of Rational Numbers

### 1. Choose the correct option. (MCQ's)

- (i) The multiplicative inverse of  $\frac{3}{-4}$  is  
 (a)  $\frac{-1}{4}$                       (b)  $\frac{4}{-3}$                       (c)  $\frac{-4}{3}$                       (d) Both (b) and (c)
- (ii) The product of  $\frac{-6}{7}$  and  $\frac{35}{-18}$  is  
 (a)  $\frac{3}{5}$                       (b)  $\frac{5}{3}$                       (c)  $\frac{-5}{3}$                       (d)  $\frac{-3}{5}$
- (iii) If  $\left(\frac{2}{-7} \times \frac{-3}{8}\right) \times x = \frac{-2}{7} \times \left(\frac{3}{-8} \times \frac{1}{-7}\right)$ , the value of x is  
 (a)  $\frac{2}{-7}$                       (b)  $\frac{-2}{7}$                       (c)  $\frac{1}{-7}$                       (d)  $\frac{-3}{8}$

### 2. Fill in the blanks :

- (i) The reciprocal of a positive rational number is a ..... rational number.  
 (ii) The reciprocal of a negative rational number is a ..... rational number.  
 (iii) The product of a rational number and its reciprocal is .....
- (iv)  $\frac{7}{2} \div 1 = \dots\dots\dots$                       (v)  $\frac{7}{2} \div \frac{7}{2} = \dots\dots\dots$                       (vi)  $\frac{5}{7} \div \dots\dots\dots = \frac{5}{7}$

### 3. Find the product :

$$(i) \frac{4}{5} \times \frac{3}{4} \times \frac{4}{3}$$

$$(ii) \frac{11}{2} \times \frac{14}{5} \times \frac{2}{11}$$

### 4. Write 'True' or 'False' for each of the following statements :

(i) The product of two rational numbers is always a rational number.

(ii) The product of zero and a rational number is 1.

$$(iii) \frac{4}{5} \div \frac{4}{5} = \frac{4}{5} \times \frac{5}{4}$$

$$(iv) 0 \div \frac{4}{5} = \frac{4}{5}$$

$$(v) \frac{4}{5} \div 0 = \frac{4}{5}$$

### 5. Divide :

$$(i) \frac{-28}{27} \text{ by } \frac{-5}{9}$$

$$(ii) \frac{-8}{35} \text{ by } \frac{2}{3}$$

$$(iii) \frac{8}{9} \text{ by } \frac{-5}{6}$$

Teacher's Signature : .....



# WORKSHEET 9



## Terminating and Non-Terminating Decimals

DATE : .....

### 1. Choose the correct option. (MCQ's)

(i)  $\frac{21}{28} =$

(a) 0.08

(b) 0.804

(c) 0.84

(d) 0.844

(ii) Which of the following has a terminating decimal representation ?

(a)  $\frac{3}{21}$

(b)  $\frac{5}{48}$

(c)  $\frac{1}{60}$

(d)  $\frac{7}{40}$

(iii) Which of the following has a non-terminating decimal representation ?

(a)  $\frac{2}{45}$

(b)  $\frac{1}{5}$

(c)  $\frac{13}{80}$

(d)  $\frac{5}{16}$

### 2. State 'True' or 'False' for each of the following :

(i) We can write  $0.\overline{123} = 0.123123123\dots$

(ii) 0.90000 can be written as  $0.\overline{9}$ .

(iii) The decimal representation of  $\frac{3}{14}$  is a non-terminating repeating decimal.

(iv) We can write  $0.\overline{16}$  as 0.161616...

(v)  $\frac{1}{20}$  can be written as a terminating decimal.

### 3. Match the rational numbers given in the column A with its correct decimal representation given in the column B.

#### Column-A

(i)  $\frac{2}{7}$

(ii)  $\frac{1}{6}$

(iii)  $\frac{3}{11}$

(iv)  $\frac{1}{9}$

#### Column-B

(a)  $0.\overline{1}$

(b)  $0.\overline{27}$

(c)  $0.\overline{285714}$

(d)  $0.1\overline{6}$

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# WORKSHEET 10

DATE : .....

## Decimals

### 1. Choose the correct option. (MCQ's)

- (i)  $\frac{1}{3}$  is equivalent to  
 (a) 3.3 (b) 0.32 (c) 0.3 (d) 3.23
- (ii) Multiplying 8.78 by 1.85, we get  
 (a) 162.43 (b) 0.16243 (c) 1.6243 (d) 16.243
- (iii) Dividing 6.35 by 0.05, we get  
 (a) 127 (b) 1.27 (c) 12.7 (d) 12.71
- (iv) 564 dm = ..... km  
 (a) 0.564 (b) 0.0564 (c) 0.00564 (d) 5640000

### 2. Express each of the following decimals as rational number :

- (i) 0.3  (ii) 1.54  (iii) 2.305
- (iv) 3.75  (v) 0.375  (vi) 2.064
- (vii) 8.050  (viii) 0.00052  (ix) 2.0002

### 3. Multiply :

- (i) 39.9 by 10  (ii) 0.0057 by 100
- (iii) 0.001 by 1000  (iv) 1000 by 4.75000
- (v) 0.0001 by 0.01  $\times$  5000.75

### 4. Solve the following :

- (i)  $(5 + 1.25) \times 4.5$
- (ii)  $(1.026 + 2.025) \times 1000$
- (iii)  $(15.64 - 9.64) \times 100$

### 5. Solve the following without actual division :

- (i)  $95.73 \div 10$   (ii)  $0.0575 \div 100$
- (iii)  $1000.1 \div 10$   (iv)  $0.1 \div 10000$

6. How many 25-paise coins are there in ₹ 125 ?

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## Exponential Notation

DATE : .....

### 1. Choose the correct option. (MCQ's)

(i) The exponential form of  $\frac{32}{-243}$  is

- (a)  $\left(\frac{2}{-7}\right)^5$       (b)  $\left(\frac{2}{5}\right)^6$       (c)  $\left(\frac{2}{-3}\right)^5$       (d)  $\left(\frac{2}{7}\right)^6$

(ii) The value of  $\left[\left(\frac{-2}{3}\right)^3\right]^{-1}$  is

- (a) 2      (b)  $\frac{27}{4}$       (c) -9      (d)  $\frac{-27}{8}$

2. Write the reciprocal of  $\left(\frac{-2}{3}\right)^5$ .       3. Express  $\frac{-8}{27}$  in exponential notation.

### 4. Write the 'base' and 'exponent' in each of the following :

- (i)  $\left(\frac{-3}{7}\right)^5$        (ii)  $\left(\frac{3}{-5}\right)^{-5}$        (iii)  $\left(\frac{2}{9}\right)^{10}$        (iv)  $\left(\frac{-1}{2}\right)^9$

### 5. Express each of the following rational numbers in the exponential form :

- (i)  $\frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3}$        (ii)  $\left(\frac{4}{-7}\right) \times \left(\frac{4}{-7}\right) \times \left(\frac{4}{-7}\right) \times \left(\frac{4}{-7}\right)$

### 6. Express each of the following in exponential form :

- (i)  $\frac{-1}{128}$        (ii)  $\frac{-27}{125}$        (iii)  $\frac{27}{64}$        (iv)  $\frac{343}{1000}$        (v)  $\frac{8}{-27}$

### 7. Write the reciprocal of each of the following :

- (i)  $\left(\frac{-5}{8}\right)^{21}$        (ii)  $(-2)^3$

### 8. Find the following :

- (i) The cube of  $\left(\frac{1}{3}\right)$        (ii) The fifth power of  $\left(\frac{1}{2}\right)$    
 (iii) The cube of  $\left(\frac{-3}{5}\right)$        (iv) The fourth power of  $\frac{5}{7}$

Teacher's Signature : .....



# WORKSHEET 12



## Laws of Exponents

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The value of  $\left(\frac{2}{9}\right)^3 + \left(\frac{-2}{3^2}\right)^3$  is  
 (a) -1 (b) -8 (c)  $\frac{8}{27}$  (d)  $\frac{-27}{8}$
- (ii) The value of  $\left(\frac{5}{8}\right)^1 \times \left(\frac{64}{125}\right)^0 \times \left(\frac{-2}{5}\right)^3$  is  
 (a) 5 (b)  $\frac{1}{25}$  (c)  $\frac{-4}{5}$  (d) -1

### 2. Fill in the blanks :

- (i)  $\left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) = (\dots\dots\dots)^4$  (ii)  $\frac{8}{27} = (\dots\dots\dots)^3$   
 (iii)  $\frac{8}{27} = (\dots\dots\dots)^3$  (iv)  $(-3)^3 \times (-3)^4 = (-3) \dots\dots\dots$  (v)  $(-3)^3 \div (-3)^4 = \dots\dots\dots$

### 3. Write 'True' or 'False' for each of the following :

- (i)  $(5)^2 \times (5)^2 = (5)^4$   (ii)  $(5)^2 \times (3)^2 = \left(\frac{5}{3}\right)^2$   (iii)  $[2^3 \times 2^2]^2 = (2)^{12}$    
 (iv)  $[5^2 \times 5^3]^2 = (5)^{10}$   (v)  $[(61)^2 \times (61)^3]^0 = 1$

### 4. Express each of the following as a rational number :

- (i)  $\left(\frac{-4}{3}\right)^2$   (ii)  $\left(\frac{3}{-2}\right)^4$    
 (iii)  $\left(\frac{-5}{4}\right)^3$   (iv)  $\left(\frac{3}{-5}\right)^5$

### 5. Find the value of :

- (i)  $\left(\frac{2}{-3}\right)^3 \times \left(\frac{-4}{3}\right)^2$   (ii)  $\left(\frac{5}{-3}\right)^4 \times \left(\frac{1}{-2}\right)^5$

### 6. If $x = -2$ and $y = 3$ , then find the value of :

- (i)  $\left(\frac{x}{y}\right)^x$   (ii)  $\left(\frac{y}{x}\right)^y$   (iii)  $\left(\frac{x}{y}\right)^y$   (iv)  $\left(\frac{y}{x}\right)^x$

Teacher's Signature : .....



# WORKSHEET 13



## Scientific Notation of a Rational Number

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The number 0.0045 can be expressed in the scientific notation as  
 (a)  $45 \times 10^{-6}$       (b)  $4.5 \times 10^{-3}$       (c)  $0.045 \times 10^2$       (d)  $4.5 \times 10^{-4}$
- (ii) 698000 can be expressed in the scientific notation as  
 (a)  $6.98 \times 10^4$       (b)  $6.98 \times 10^{-4}$       (c)  $6.98 \times 10^{-5}$       (d)  $6.98 \times 10^5$

### 2. Write 'True' or 'False' for each of the following :

- (i)  $2000 = 2 \times 1000 = 2.0 \times 10^3$
- (ii)  $10000 = 1 \times 10000 = 1.0 \times 10^{-4}$
- (iii) 0.1 can be expressed in standard form as  $1.0 \times 10^{-1}$ .
- (iv) 0.01 can be expressed in standard form as  $10.0 \times 10^{-2}$

### 3. Fill in the blanks :

- (i)  $1.0 \times 10^{-5} = \frac{1}{\dots\dots\dots}$
- (ii)  $5.3 \times 10^{-2} = \frac{53}{\dots\dots\dots}$

### 4. Write the following numbers using scientific notation :

- (i) 0.00000056            (ii) 0.000000000081
- (iii) 8100000000000            (iv) 279000000
- (v) 0.000000279            (vi) 638000000

5. The surface area of the whole earth is  $510000000 \text{ km}^2$  approximately. Express it in standard form.

6. The mass of earth is 5980000000000000000000000 kg. Express it in scientific notation.

7. The distance travelled by a ray of light in one year is 9460500000000000 metres. Express it in its standard form.

8. The mean distance of the moon from the earth is 384400000 m. Rewrite it in its standard form.

9. The velocity of sound is 33000 cm/second approximately. Write it in scientific notation.

### 10. Write the following numbers in the usual form :

- (i)  $5.91 \times 10^{10}$             (ii)  $8.202 \times 10^{-8}$

Teacher's Signature : .....



DATE : .....



## Ratio and Proportion

### 1. Choose the correct option. (MCQ's)

- (i) Your height is double of your friend's height. The ratio of your friend's height to yourself is  
 (a) 2 : 1 (b) 1 : 2 (c) 1 : 3 (d) 3 : 1
- (ii) If 12, x, 3 are in the continued proportion, the value of x is  
 (a) 3 (b) 9 (c) 4 (d) 6
- (iii) A train journey of 75 km costs ₹ 215. How much will be the cost for the journey of 135 km ?  
 (a) ₹ 387 (b) ₹ 364 (c) ₹ 384 (d) ₹ 414

### 2. Which ratio is larger in the following pairs ?

- (i) 3 : 4 or 9 : 17  (ii) 7 : 8 or 24 : 25  (iii) 4 : 7 or 5 : 8

### 3. Which of the following is/are in proportion ?

- (i) 27, 9, 12, 4  (ii) 6, 2, 4, 3  (iii) 1.5, 4.5, 1, 2

### 4. Find x in the following proportions :

- (i)  $x : 6 = 40 : 8$   (ii)  $18 : x = 54 : 6$   (iii)  $19 : 38 = 15 : x$

5. Divide ₹ 1250 between A and B in the ratio 2 : 3. ,

6. Boys and girls in a school are in the ratio 7 : 4. If the total strength of the school is 550, find the number of boys and girls. ,

7. The sides of a triangle are in the ratio 3 : 2 : 1. If the perimeter is 36 cm, find its sides. , ,

8. The price of 8 metres of cloth is ₹ 212. Find the price of 15 metres of such cloth.

9. A car travels 220 km in 4 hours.

(i) How much time will it take to travel 440 km ?

(ii) How far will it travel in  $6\frac{1}{2}$  hours ?

10. A worker earns ₹ 18000 in 15 days.

(i) How much does he earn in 7 days ?

(ii) In how many days will he earn ₹ 30,000 ?

Teacher's Signature : .....



# WORKSHEET 15



## Percentage

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) 10% of 1 is  
 (a) 100            (b) 1                    (c) 0.1                    (d) 0.01
- (ii) The percentage form of  $\frac{3}{12}$  is  
 (a) 75%            (b) 45%                    (c) 30%                    (d) 25%
- (iii) 8 : 25 in per cent is  
 (a) 32%            (b) 64%                    (c) 40%                    (d) 48%
- (iv) The percentage form of 1.05 is  
 (a) 10%            (b) 15%                    (c) 10.5%                    (d) 105%

### 2. Fill in the blanks to make the following statements true using correct option given in the brackets :

- (i) A fraction with its denominator as ..... is called a percent. [100, 10]
- (ii) To convert a fraction into percent, we ..... it by 100. [multiply, divide]
- (iii) To convert a percent in to a fraction we ..... it by  $\frac{1}{100}$  and remove the sign (%). [multiply, divide]
- (iv)  $25\% = 25 : \dots\dots\dots$  [100,  $\frac{1}{100}$ ]
- (v) To convert a decimal into a percent, we shift the decimal point two places to the ..... [left, right]

### 3. Express the following as percentages :

- (i)  $\frac{1}{10}$              (ii)  $\frac{1}{4}$              (iii)  $\frac{1}{3}$              (iv)  $\frac{1}{8}$

### 4. Express each of the following as fractions in their lowest terms :

- (i) 5%             (ii) 20%             (iii) 30%

### 5. Express the following as ratios in the lowest form :

- (i) 25%             (ii) 50%             (iii) 150%

### 6. Write the following decimal fractions as percent :

- (i) 0.2             (ii) 0.53

Teacher's Signature : .....





## Profit, Loss and Simple Interest

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) An article is bought for ₹ 600 and sold for ₹ 840. The profit per cent is  
 (a) 60%      (b) 35%      (c) 40%      (d) 48%
- (ii) After selling a computer set for ₹ 40000, a shopkeeper earns a profit of  $11\frac{1}{9}\%$ . The cost price of the computer for the shopkeeper is  
 (a) ₹ 33500      (b) ₹ 36000      (c) ₹ 38500      (d) ₹ 37600
- (iii) A car is bought for ₹ 3,20,000 and sold at a loss of 25%. The selling price of the car is  
 (a) ₹ 2,60,000      (b) ₹ 2,56,000      (c) ₹ 2,40,000      (d) ₹ 2,36,000
- (iv) If an article having cost price ₹ 120 is sold at a loss of 20%, its selling price is  
 (a) ₹ 96      (b) ₹ 104      (c) ₹ 105      (d) ₹ 104.50
- (v) The simple interest on ₹ 1500 for a period of 16 months at 13% per annum is  
 (a) ₹ 320      (b) ₹ 205      (c) ₹ 360      (d) ₹ 260
- (vi) A man deposited ₹ 2500 in a bank for 73 days. If the simple interest is paid at 14% per annum, the amount to be received at the end is  
 (a) ₹ 2800      (b) ₹ 2570      (c) ₹ 2760      (d) ₹ 2690

### 2. Fill in the blanks :

- (i) The price for which an article is purchased is called the .....
- (ii) The price for which an article is sold is called the .....
- (iii) Profit = S.P. - .....      (iv) Loss = C.P. - .....
- (v) Profit % =  $\frac{\text{Profit} \times 100}{\dots\dots\dots}$       (vi) Loss % =  $\frac{\text{Loss} \times 100}{\dots\dots\dots}$

3. An article is bought for ₹ 20 and sold for ₹ 25. Find profit percent.

4. A man purchased an article for ₹ 600 and sold it for ₹ 550. Find loss %.

5. What is the interest on ₹ 100 at 15% per annum for 1 year ?

Teacher's Signature : .....



# WORKSHEET 17



## Basics of Algebraic Expressions

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) One pencil costs ₹ 3 and one fountain pen costs ₹ 10. The cost of  $x$  pencils and  $y$  fountain pens is  
 (a)  $3x + 10y$       (b)  $3x - 10y$       (c)  $10x - 3y$       (d)  $10x + 3y$
- (ii) Which of the following is not a binomial ?  
 (a)  $\frac{x}{2} - 7y$       (b)  $a^2b - bc + 1$       (c)  $2x + 3y$       (d)  $-7xy^2 + \frac{3}{5}x^2$
- (iii) If  $x = -4$  and  $y = 6$ , the value of  $(3x + 2y)$  is  
 (a)  $-12$       (b)  $0$       (c)  $8$       (d)  $1$
- (iv) The degree of the expression  $-15p^3q^4 + p^2q^6 + \frac{2}{3}p^5q$  is  
 (a)  $6$       (b)  $7$       (c)  $8$       (d)  $5$

### 2. Write the algebraic expression for each of the following statements or phrases using numbers, literals and the basic operations :

- (i) The addition of  $x$ ,  $y$  and  $5$ .
- (ii)  $x$  is subtracted from the sum of  $y$  and  $z$ .
- (iii) The sum of  $x$  and  $y$  is multiplied by  $4$ .
- (iv) The quotient of  $x$  by  $y$  is added to the product of  $x$  and  $y$ .

### 3. Write the following in exponential form :

- (i)  $a \times a \times a \times a \times \dots$  (10 times)
- (ii)  $7 \times a \times a \times b \times b \times c \times c$
- (iii)  $13 \times p \times p \times \dots$  (7 times)  $\times q \times q \times \dots$  (12 times)

### 4. Write each of the following in the expanded form :

- (i)  $a^2b^5$        (ii)  $7a^3b^4$        (iii)  $30x^2y^3z^4$

### 5. Write the coefficient of $x$ in each of the following :

- (i)  $3x$        (ii)  $-4xa$        (iii)  $5y^2x$

### 6. Evaluate each of the following algebraic expressions for $x = 2$ , $y = -3$ , $z = -2$ , $a = 2$ , $b = 3$ :

- (i)  $4a + ab$        (ii)  $2a^2 + 2x - y^2$
- (iii)  $4xy^2 - 3yz^2 + 4x^2z$        (iv)  $4x + y^3 + 3xyz + bx$

Teacher's Signature : .....



## Operations of Algebraic Expressions

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The sum of  $-3x^2 - 4x^2y^2 + 3y^4$  and  $5x^2 + 4x^2y^2 - y^4$  is  
 (a)  $2x^2 - 8x^2y^2 + 2y^4$  (b)  $2x^2 + 8x^2y^2 + 2y^4$   
 (c)  $2x^2 + 2y^4$  (d)  $2x^2 - 2y^2$
- (ii)  $-2x^2y^3 - 2x^2y^3 + 8x^2y^3$  is equivalent to  
 (a)  $4x^3y^2$  (b)  $4x^2y^3$  (c)  $8x^2y^3$  (d)  $8x^3y^2$
- (iii) On subtracting  $x^4 - 4x^2y^2 + y^4$  from  $x^4 + 8x^2y^2 + y^4$ , we get  
 (a)  $-12x^2y^2$  (b)  $12x^2y^2$  (c)  $-12xy$  (d)  $12xy$
- (iv) The sum of  $-5ab$ ,  $-2ab$  and  $16ab$  is  
 (a)  $9ab$  (b)  $9a^2b^2$  (c)  $13ab$  (d)  $7ab$
- (v) The product of  $-ab$ ,  $2b^2$  and  $-5a^2b$  is  
 (a)  $-10a^2b^4$  (b)  $10a^3b^4$  (c)  $10a^2b^4$  (d)  $-10a^3b^4$

### 2. Add :

- (i)  $10a^2y, -7a^2y, -10a^2y, -17ya^2$
- (ii)  $16ab, -7ab, -10ab, -9ab$
- (iii)  $7xyz, -3zyx, -3xzy$
- (iv)  $-7mn, -10, 12mn, -2, 9mn, 23$

### 3. Subtract :

- (i)  $8x$  from  $12x$   (ii)  $-4a$  from  $6a$

### 4. Subtract by the column method :

- (i)  $4x^2 + y^2$  from  $8x^2 - 3y^2$
- (ii)  $11a^2 - 3ab$  from  $12a^2 - 7ab$

5. If  $P = 2x^3 + 3x^2 - 4x - 5$ ,  $Q = 6x^3 + 5x^2 + 3x - 2$  and  $R = 6x^3 - 4x^2 - 7x + 3$ ,  
 find  $(P+Q) - R$ .

6. Multiply  $-5x^2yz^2$  by  $36xy^2z^3$ .

Teacher's Signature : .....



# WORKSHEET 19



## Solution of Linear Equations

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) If  $2x - (-1) = 3$ , the value of  $x$  is  
 (a) 2 (b) -2 (c) -1 (d) 1
- (ii) On solving  $3(3x - 10) = 2x + 5$ , the solution is  
 (a)  $x = 5$  (b)  $x = \frac{1}{3}$  (c)  $x = \frac{1}{5}$  (d)  $x = 3$
- (iii) If  $5a - \frac{3}{4} = 2a - \frac{2}{3}$ , then  $a =$   
 (a)  $\frac{1}{4}$  (b)  $\frac{1}{36}$  (c) 4 (d)  $\frac{1}{12}$
- (iv) On solving  $\frac{x+1}{x-1} = \frac{9}{7}$ , we get  
 (a)  $x = 10$  (b)  $x = 8$  (c)  $x = 6$  (d)  $x = 7$

### 2. Fill in the blanks :

- (i) If  $5x = 5$ , then  $x =$  .....
- (ii) If  $\frac{2}{3}x = \frac{4}{3}$ , then  $x =$  .....
- (iii) If  $x + 1 = 4$ , then  $x =$  .....
- (iv) If  $x + 1 = 5$ , then  $x =$  .....
- (v) If  $x - 1 = 4$ , then  $x =$  .....
- (vi) If  $1 - x = -2$ , then  $x =$  .....
- (vii) If  $\frac{1}{2} - x = \frac{1}{2}$ , then  $x =$  .....
- (viii) If  $x - \frac{1}{2} = 0$ , then  $x =$  .....
- (ix) If  $x - \frac{1}{2} = \frac{1}{2}$  then  $x =$  .....
- (x) Any term of an equation may be transposed from one side of the equation to the other side of the equation by changing .....
- (xi) Solving a linear equation in one variable means finding a value of the variable which ..... the given equation.

3. If  $2x - 3 = 1$ , then find  $x$ .

4. If  $3x - 2 = 4$ , then find  $x$ .

5. If  $2 - 3x = -1$ , then find  $x$ .

6. If  $5x - 0 = 5$ , then find  $x$ .

7. If  $9x + 1 = 10$ , then find  $x$ .

### 8. Solve the following equations :

(i)  $5x = 2x + 7$

(ii)  $5x = 8 + 3x$

(iii)  $2x = 12 - 4x$

Teacher's Signature : .....



## Application of Linear Equations

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) If thrice a number when increased by 8 gives 26, the number is  
(a) 11                      (b) 6                      (c) 7                      (d) 8
- (ii) Two supplementary angles differ by  $32^\circ$ . The smaller of the two measures is  
(a)  $74^\circ$                       (b)  $32^\circ$                       (c)  $86^\circ$                       (d)  $56^\circ$
- (iii) The present ages of two friends are in the ratio 5 : 3. After 6 years, their ages will be in the ratio 7 : 5. The present age of the first student is  
(a) 10 years                      (b) 15 years                      (c) 20 years                      (d) 5 years

2. Ten added to thrice a whole number gives 46. Find the number.

3. Find a number such that when it is doubled and 11 added to it, the result is 27.

4. Two numbers differ by 5. If their sum is 19, then find the two numbers.

5. When 35 is added to 5 times a certain number, the result is 100. Find the number.

6. Find four consecutive numbers whose sum is 78.

7. The length of a rectangle is twice the breadth. If its perimeter is 60 m, then find its length.

8. The angles of a triangle are  $x^\circ$ ,  $x + 15^\circ$  and  $2x - 15^\circ$ . Find the smallest angle of the triangle.

9. After 8 years Raman will be three times as old as he was 6 years ago. Find his present age.

10. Nitin is as old as three times Rohit is. After three years he will be twice as old as Rohit. Find their present ages.

11. Sudha is twice as old as her brother. Three years ago, Sudha's age was three times of her brother's age. Find the age of Sudha.

12. Savita has ₹ 27 in fifty-paise and twenty-five paise coins. She has twice as many twenty-five paise coins as she has fifty-paise coins. How many coins of each kind does she have ?

Teacher's Signature : .....



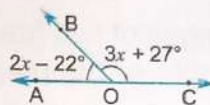
# WORKSHEET 21

## Pairs of Angles

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The common end-point where two rays meet to form an angle is called  
(a) vertex (b) arm (c) ray (d) segment
- (ii) The complement of  $19^\circ$  is  
(a)  $19^\circ$  (b)  $71^\circ$  (c)  $90^\circ$  (d)  $161^\circ$
- (iii) In the Fig. given at right, the value of  $x$  is  
(a)  $65^\circ$  (b)  $50^\circ$  (c)  $75^\circ$  (d)  $35^\circ$
- (iv) The supplement of  $165^\circ$  is  
(a)  $165^\circ$  (b)  $105^\circ$  (c)  $75^\circ$  (d)  $15^\circ$
- (v) One of the angles of a linear pair is  $56^\circ$ . The other angle is  
(a)  $84^\circ$  (b)  $124^\circ$  (c)  $144^\circ$  (d)  $34^\circ$

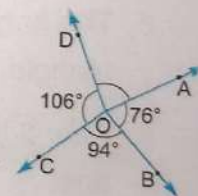


### 2. Which of the following statements is/are 'True' or 'False' ?

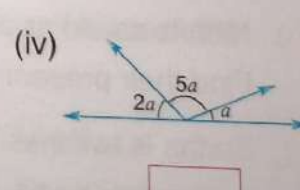
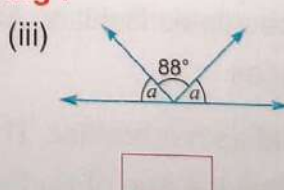
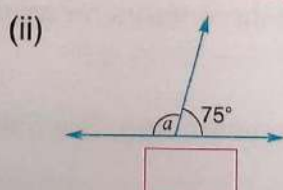
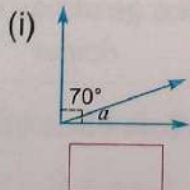
- (i) The sum of two complementary angles is always equal to  $90^\circ$ .
- (ii) All adjacent angles are complementary.
- (iii) The supplement of an acute angle is always an obtuse angle.
- (iv) Vertically opposite angles are always equal.


### 3. Look at the adjacent Fig. and answer the following questions.

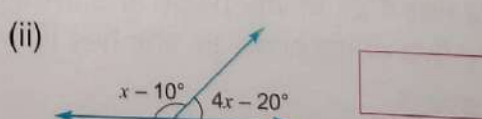
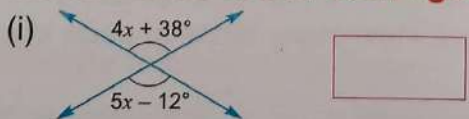
- (i) Do  $\angle AOB$  and  $\angle BOC$  form a linear pair ?
- (ii) Are  $\angle AOB$  and  $\angle COD$  vertically opposite angles ?
- (iii) Do  $\angle AOD$  and  $\angle DOC$  form a linear pair ?

### 4. Find the value of $a$ in each of the following :



### 5. Find the value of $x$ in each figure :



Teacher's Signature : .....



## Parallel Lines and Transversal

DATE : .....

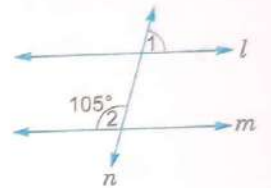
### 1. Choose the correct option. (MCQ's)

(i) If two lines are intersected by a transversal, the alternate interior angles formed are equal. Then the lines are

- (a) equal.
- (b) not equal.
- (c) parallel.
- (d) None

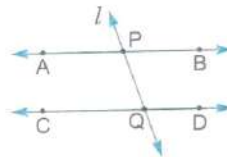
(ii) In the following figure, if  $l \parallel m$  and  $n$  is the transversal, then the value of  $\angle 1$  is

- (a)  $105^\circ$
- (b)  $90^\circ$
- (c)  $75^\circ$
- (d)  $85^\circ$

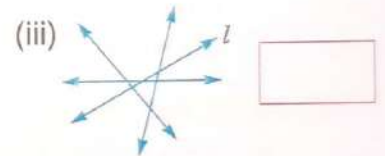
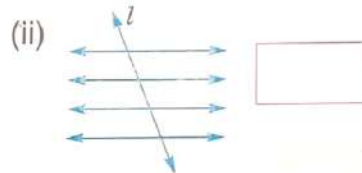
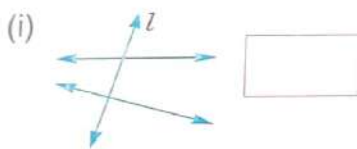


(iii) In the adjoining figure, if  $AB \parallel CD$  and  $\angle APQ = 125^\circ$ , then  $\angle PQD =$

- (a)  $55^\circ$
- (b)  $125^\circ$
- (c)  $70^\circ$
- (d)  $75^\circ$

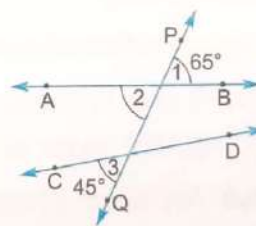


### 2. In each of the following figures, state whether the line $l$ is a transversal :



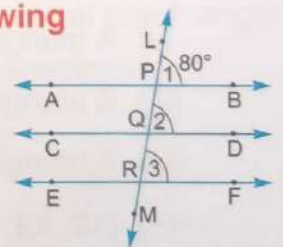
3. In the Fig.,  $\angle 1 = 65^\circ$  and  $\angle 3 = 45^\circ$ .

Are AB and CD parallel ?



4. In the adjoining figure, if  $AB \parallel CD$  and  $CD \parallel EF$ , answer the following questions :

- (i) Is  $\angle 1 = \angle 2$  ?
- (ii) Is  $\angle 2 = \angle 3$  ?
- (iii) Is  $AB \parallel EF$  ?



Teacher's Signature : .....

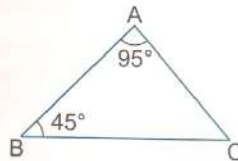
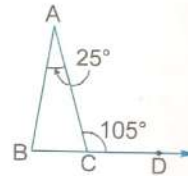


## Triangles and Their Properties

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) An isosceles right triangle has two acute angles. One of the two acute angles measures
  - (a)  $60^\circ$
  - (b)  $30^\circ$
  - (c)  $45^\circ$
  - (d)  $40^\circ$
- (ii) What is wrong about an equilateral triangle ?
  - (a) It has three acute angles.
  - (b) It has two acute angles and one obtuse angle.
  - (c) It has three equal angles each of  $60^\circ$ .
  - (d) It has three equal sides.
- (iii) In the Fig., which of the following is true ?
  - (a)  $BC > AC$
  - (b)  $AC > AB$
  - (c)  $AB > AC$
  - (d)  $AB < BC$
- (iv) In the Fig., the smallest side is
  - (a) AC
  - (b) AB
  - (c) BC
  - (d) None of these



### 2. Fill in the blanks :

- (i) An equilateral triangle has ..... elements.
- (ii) In a right isosceles triangle, the sum of its acute angles is .....
- (iii) The sum of any two sides of a triangle is ..... than the third side.
- (iv) In any triangle, an ..... is greater than either of the interior opposite angles.

### 3. Write 'true or 'false' for each of the following :

- (i) A triangle, whose two sides are unequal, is called an equilateral triangle.
- (ii) A triangle, whose all sides are equal to each other, is called a right triangle.
- (iii) A triangle, whose one angle is an obtuse angle, is called a obtuse triangle.
- (iv) A triangle, whose all angles are less than  $90^\circ$ , is called an obtuse triangle.
- (v) (12, 13, 15) is an example of Pythagorean triplets.
- (vi) The sum of the angles of a triangle is  $180^\circ$ .

Teacher's Signature : .....





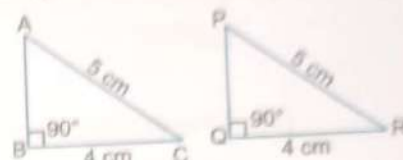
## Congruent Figures

DATE : .....

### 1. Choose the correct option. (MCQ's)

(i) In the following Fig.,  $\triangle ABC \cong \triangle PQR$ . Which of the following congruence conditions can be used for the congruence of the two triangles ?

- (a) SSS                      (b) RHS  
 (c) SAS                      (d) All of these



(ii) In the following Fig., O is the mid-point of AB and CD. By using which of the following congruence conditions  $\triangle AOC \cong \triangle BOD$  ?

- (a) SSS      (b) SAS      (c) ASA                      (d) RHS



### 2. Fill in the blanks :

- (i) Two line segments are congruent, if they have the same .....
- (ii) Two angles are congruent, if they have the same, .....
- (iii) Two squares are congruent, if they have the same side .....
- (iv) Two circles are congruent, if they have the same .....

### 3. Write 'true' or 'false' for each of the following :

- (i) Two figures are congruent, if they have the same shape and size.
- (ii) Two rectangles are congruent, if they have the same side length.
- (iii) Two angles are congruent, if they have same length of arms.
- (iv) The corresponding parts of congruent triangles are equal.
- (v) Two triangles are congruent, if the three sides of one triangle are respectively equal to the three sides of the other triangle.
- (vi) Two triangles are congruent, if two sides and an angle of one triangle are equal to the two sides and an angle of the other respectively.
- (vii) Two triangles are congruent, if two angles and the included side of the one triangle are equal to the two angles and the included side of the other respectively.

4. In the following Fig., line segments PQ and RS bisect each other at O. Which of the following statements is true ?

- (i)  $\triangle POR \cong \triangle SOQ$                        (ii)  $\triangle POR \cong \triangle QOS$
- (iii)  $\triangle POR \cong \triangle OSQ$



Teacher's Signature : .....



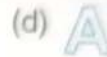
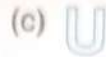
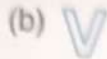
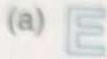
# WORKSHEET 25

## Symmetry

DATE : .....

### 1. Choose the correct option. (MCQ's)

(i) Which of the following has a horizontal line of symmetry ?



(ii) The value of rotation angle in the given figure is

(a)  $75^\circ$

(b)  $45^\circ$

(c)  $60^\circ$

(d)  $180^\circ$



(iii) The English alphabet 'H' shows

(a) rotational symmetry only.

(b) line symmetry only.

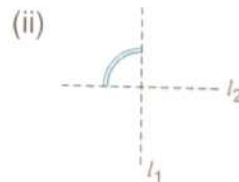
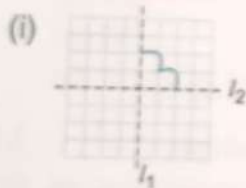
(c) both line and rotational symmetry.

(d) only rotational but not line symmetry.

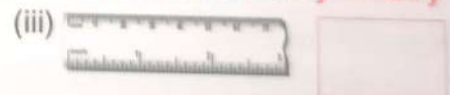
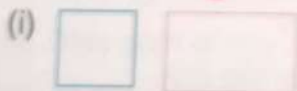
### 2. Draw the following images keeping the mirror on the dotted line :



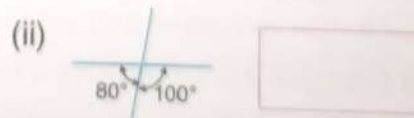
### 3. Complete each of the following figures to be symmetric about the mirror line :



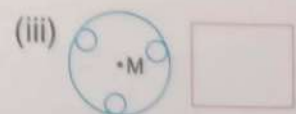
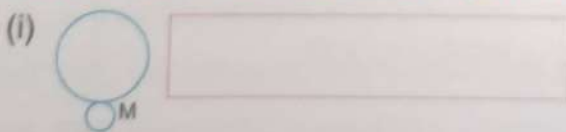
### 4. What is the angle at which each of the following figures shows rotational symmetry ?



### 5. Discuss the rotational symmetry of the following figures. Also, find the order of symmetry.



### 6. Discuss the rotational symmetry of the following figures, when each one is rotated about at point M. Also, find the order of rotational symmetry.




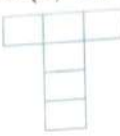

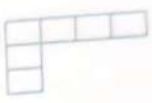
Teacher's Signature : .....



DATE : .....

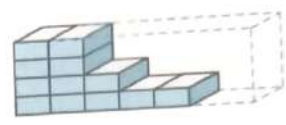
## Representing 3D in 2D




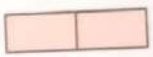
### 1. Choose the correct option. (MCQ's)

- (i) Which of the following is not a 3D figure ?  
 (a) cone                      (b) square                      (c) cuboid                      (d) cube
- (ii) A solid figure having only curved face is called a  
 (a) cone                      (b) cylinder                      (c) sphere                      (d) circle
- (iii) Which of the following net(s) represent(s) the net of a cuboid ?  
 (a)                       (b)                       (c)                       (d) 

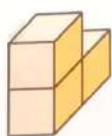

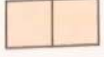
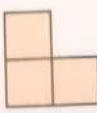

- (iv) How many isometric sketches are possible for a cuboid of size  $5 \times 3 \times 3$  units ?  
 (a) 1                      (b) 2                      (c) 3                      (d) 4

- (v) How many cuboids are required to fill up the box given at right ?  
 (a) 15                      (b) 19                      (c) 12                      (d) 16



- (vi) For a solid as shown at right, few views are given in the options given below. The top view is  
 (a)                       (b)                       (c)                       (d) 



- (vii) The side view of  is  
 (a)                       (b)                       (c)                       (d) 

### 2. See the following figure carefully and answer the questions given below :

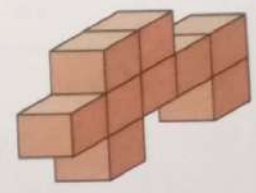
- (i) How many cuboids are there in the base layer ?
- (ii) How many cuboids are there in the middle layer ?
- (iii) How many cuboids are there in the top layer ?
- (iv) How many cuboids can be seen when it is viewed from the top and the side ?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Teacher's Signature : .....



## Construction

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) During construction of a line parallel to a given line at a given distance, which of the following is drawn on the given line in the 1st step ?  
 (a) A parallel line (b) A perpendicular line  
 (c) An angle of  $60^\circ$  (d) None of these.
- (ii) Angle between two parallel lines is  
 (a)  $60^\circ$  (b)  $0^\circ$  or  $180^\circ$  (c)  $30^\circ$  (d)  $90^\circ$

### 2. Fill in the blanks :

- (i) To construct a right triangle, its hypotenuse and one ..... should be given.  
 (ii) We can construct a triangle, when its two sides and ..... are given.  
 (iii)  $\triangle LMN$  can be constructed, when  $LM = 4$  cm,  $MN = 5.5$  cm and  $\angle M = 50^\circ$  using ..... criterion.  
 (iv) If two angles and ..... are given, a triangle can be constructed.  
 (v)  $\triangle ABC$  can be constructed with  $AC = 8$  cm,  $\angle A = 60^\circ$ ,  $\angle C = 50^\circ$  using ..... criterion.

### 3. Match the columns :

Column A	Column B
(a)	(p) SAS triangle construction.
(b)	(q) SSS triangle construction.
(c)	(r) ASA triangle construction.
(d)	(s) RHS triangle construction.

Teacher's Signature : .....



# WORKSHEET 28



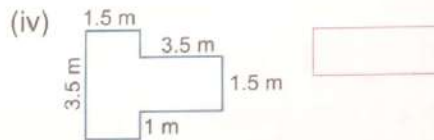
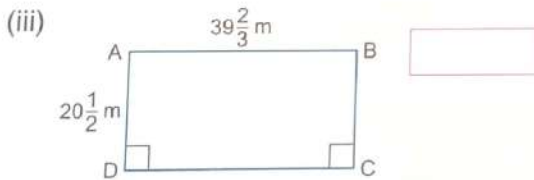
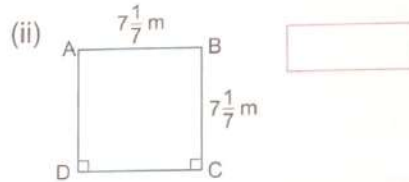
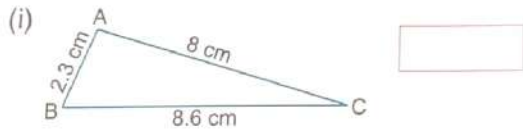
## Perimeter

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) The sides of a rectangle are 350 mm and 1.4 m. The perimeter in cm is  
 (a) 450 (b) 350 (c) 250 (d) 550
- (ii) A square field is 29 m long. How much wire is required for fencing it?  
 (a) 58 m (b) 78 m (c) 116 m (d) 86 m
- (iii) If the ratio of the radii of two circles is 17 : 19, the ratio of their circumferences is  
 (a) 34 : 38 (b) 4 : 15 (c) 8 : 15 (d) 17 : 19
- (iv) The diameter of a circular field is 420 m. The cost of fencing its circumference at the rate of ₹ 1.25 per metre is  
 (a) ₹ 1600 (b) ₹ 1650 (c) ₹ 1750 (d) ₹ 1700

### 2. Find the perimeter of each figure given below :



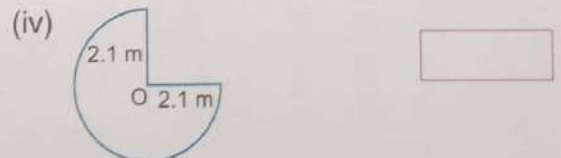
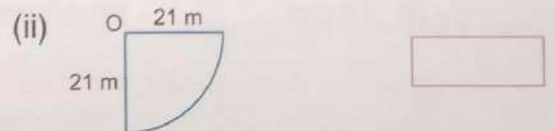
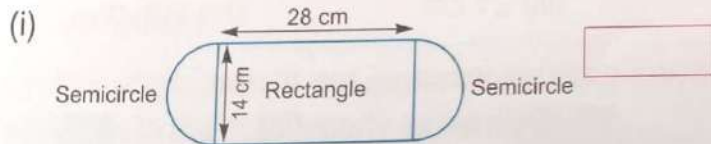
### 3. Find the circumference of a circle, whose radius is :

- (i) 28 cm  (ii) 56 cm  (iii) 20 cm  (iv) 14 cm

### 4. Find the diameter of a circle, whose circumference is :

- (i) 44 m  (ii) 22 cm  (iii) 66 m  (iv) 30.8 m

### 5. Find the perimeter of each figure :



Teacher's Signature : .....



# Area



# WORKSHEET 29

DATE : .....

### 1. Choose the correct option. (MCQ's)

- (i) If side of a square of 12 cm long, its area is  
 (a)  $144 \text{ cm}^2$       (b)  $48 \text{ cm}^2$       (c)  $124 \text{ cm}^2$       (d)  $12 \text{ cm}^2$
- (ii) The length of a rectangular field is thrice its breadth and its area is  $1200 \text{ m}^2$ . The length of the field is  
 (a) 80 m      (b) 120 m      (c) 60 m      (d) 40 m
- (iii) On increasing each side of a square by 25%, the increase in area will be  
 (a) 30%      (b) 50.5%      (c) 40.5%      (d) 56.25%
- (iv) The length and breadth of a rectangular field are in the ratio 5 : 3 and its perimeter is 448 m. The area of the field is  
 (a)  $7200 \text{ m}^2$       (b)  $11760 \text{ m}^2$       (c)  $15000 \text{ m}^2$       (d)  $13560 \text{ m}^2$
- (v) The base and height of a triangle are 10 cm and 8 cm respectively. Its area is  
 (a)  $40 \text{ cm}^2$       (b)  $48 \text{ cm}^2$       (c)  $80 \text{ cm}^2$       (d)  $60 \text{ cm}^2$
- (vi) The area of a circle of diameter 14 cm is  
 (a)  $154 \text{ cm}^2$       (b)  $176 \text{ cm}^2$       (c)  $298 \text{ cm}^2$       (d)  $260 \text{ cm}^2$

### 2. Find the area of the following rectangles whose sides are given :

- (i) length = 6 cm; breadth = 4 cm
- (ii) length = 8 cm; breadth = 6 cm
- (iii) length = 5.5 cm; breadth = 4.5 cm
- (iv) length = 12.6 cm; breadth = 3.8 cm

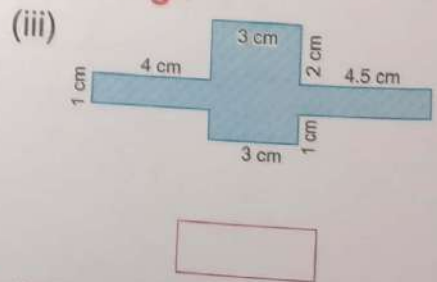
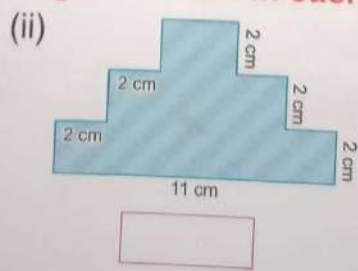
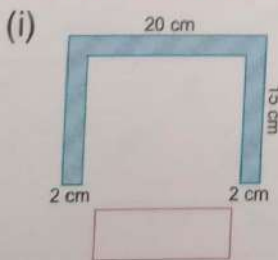

### 3. Find the area of a square whose side is :

- (i) 4 cm
- (ii) 9 cm
- (iii) 2.7 cm
- (iv) 9.9 cm

### 4. Find the area of the circle, whose diameter is :

- (i) 14 cm
- (ii) 42 cm
- (iii) 21 cm
- (iv) 105 m

### 5. Find the area of the shaded region shown in each of the following :



Teacher's Signature : .....



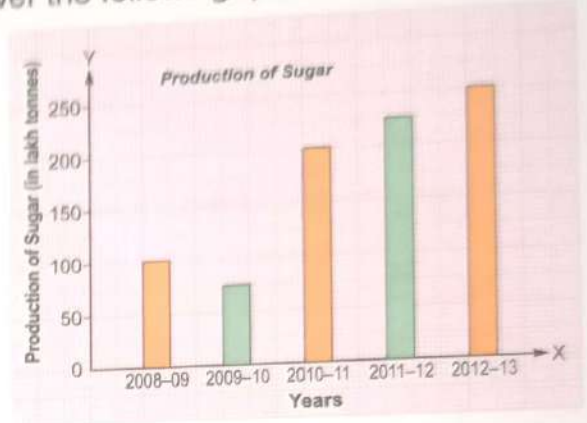
DATE : .....

## Bar Graph

### 1. Choose the correct option. (MCQ's)

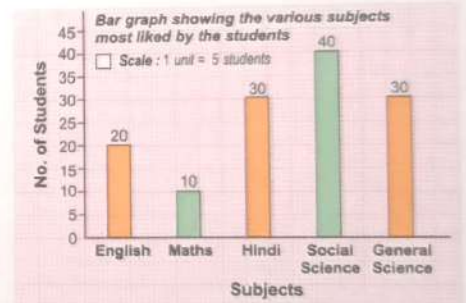
Read the bar graph given below carefully and answer the following questions by choosing the correct option :

- (i) What was the production of sugar in the year 2010-11 ?  
 (a) 100 lakh tonnes      (b) 200 lakh tonnes  
 (c) 250 lakh tonnes      (d) 150 lakh tonnes
- (ii) During which period, the production was minimum ?  
 (a) 2008-09              (b) 2011-12  
 (c) 2012-13              (d) 2009-10
- (iii) The difference of productions of sugar in the periods 2012-13 and 2011-12 is  
 (a) 50 lakh tonnes                              (b) 30 lakh tonnes  
 (c) 25 lakh tonnes                              (d) None



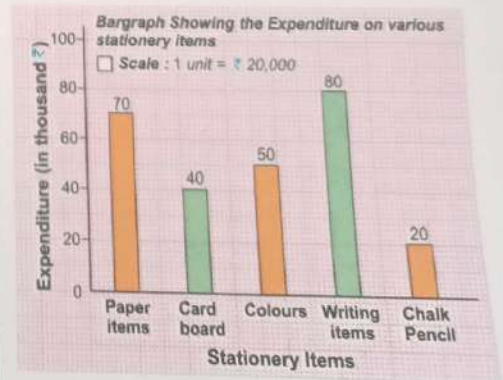
### 2. Read the bar graph given below and answer the following questions :

- (i) Which subject is liked by the maximum number of students ?
- (ii) How many subjects have been mentioned in the graph ?
- (iii) Which subject is liked by least number of students ?
- (iv) Is the number of students liking General Science tripple of those liking Maths ?



### 3. Read the bar graph given at right and answer the following questions :

- (i) What is the information given by the bar graph ?
- (ii) On which item is the expenditure minimum ?
- (iii) What is the total yearly expenditure on stationery items ?
- (iv) On which item is the expenditure maximum ?
- (v) What is the ratio of expenditure on colours to that on cardboard ?



Teacher's Signature : .....



DATE : .....

## Probability, Mean, Median and Mode

### 1. Choose the correct option. (MCQ's)

- (i) The mean of first five multiples of 5 is  
(a) 30                      (b) 20                      (c) 25                      (d) 15
- (ii) The following number of goals were scored by a team in a series of 5 matches : 6, 3, 0, 1, 2. The median is  
(a) 5                      (b) 3                      (c) 2                      (d) 4
- (iii) The mode of the following observations 30, 5, 6, 11, 30, 6, 5, 6, 6, 2, 6, 11, 5 is  
(a) 6                      (b) 3                      (c) 4                      (d) 5
- (iv) The probability of getting a tail, when a coin is tossed once, is  
(a)  $\frac{1}{3}$                       (b)  $\frac{2}{3}$                       (c)  $\frac{1}{2}$                       (d) 1
- (v) If the mean of 4, 7, 13, x, 8, 12, 11 is 8, the value of x is  
(a) 5                      (b) 8                      (c) 2                      (d) 1

### 2. Following are the heights of 10 trees (measured in metres) :

47, 40, 72, 58, 68, 49, 62, 75, 63, 70

- (i) Find the height of the tallest tree.
- (ii) Find the height of the shortest tree.
- (iii) Find the mean height.


3. Find the mean of first ten natural numbers.

4. Find the median of the following data : 3, 1, 2, 4, 1, 2, 2, 3, 5, 10.

5. In which case, the chance of desired outcome is more ?

Case I : Getting a tail in a toss of a coin.

Case II : Getting 6 in a throw of die.

6. Consider the following two situations :

Situation 1 : Chance of getting '1' or '6' in a throw of a die.

Situation 2 : Chance of getting '2', '3' or '6' in a throw of a die.

Which situation has more chance to occur ?

7. There is a defective die in which '6' dots instead of '5' are printed. In which die, the chance of getting '6' is more, in defective die or in a normal die ?

8. Find the mean of 12, 205, 41, 23, 367, 29, 23.

Teacher's Signature : .....