VII – MATHS WORKSHEET

1. SIMPLE EQUATIONS

I. SOLVE

(i) $7y + 5 = 19$ **(y = 2)**

(ii) $\frac{3k + 9}{6} = 5$ **(k = 7)**

(iii) $a + 5 = 11$ **(a = 6)**

(iv) $12a + 4 = 40$ **(a = 3)**

(v) $\frac{2x}{4} = 11$ **(x = 22)**

(vi) $\frac{3m}{7} = 9$ **(m = 21)**

(vii) $2a – 4 = 6$ **(a = 5)**

(viii) $4 (x + 3) = 20$ **(x = 2)**

(ix) $8x - 5 = 2 + 19$ **(x = 4)**

(x) $\frac{2m}{7} + 6 = 10$ **(m = 14)**

(xi) $3 (2x - 1) + 5 = 14$ **(x = 2)**

(xii) $2z – (7 – 5z) – 21 = 0$ **(z = 4)**

(xiii) $\frac{8x}{3} + 4 = 12$ **(x = 3)**

(xiv) $3 (y – 1) = 2 (2y – 6)$ **(y = 11)**

(xv) $5 – 6 (- 2) + 13 = 6$ **(x = -4)**

II. Set up equations and solve.

(i) Add 7 to 3times a number, you get 34. Find the number. (x = 9)

(ii) Subtract 23 from thrice a number the result is 7.find the number. (x = 10)

(iii) Anmol's mother is 4 years more than 3times Anmol's age. Find Anmol's age if mother is 40 years old.

(iv) Tony scored twice as many runs as Kohli. Together they scored 6 short of triple century. How many runs did each score? (196, 98).

(v) The three angles of a triangle are in the ratio 2:3:5. Find the measure of each angle. Classify the triangle (36, 54, 90) . (right angled triangle).

VII – MATHS WORKSHEET

2.Lines & Angles

1) **Find the complement of the angles :**

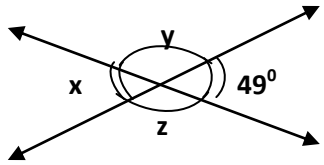
a) 56^0 b) 47^0 c) 12^0 d) 81^0

2) **Find the supplement of the angles :**

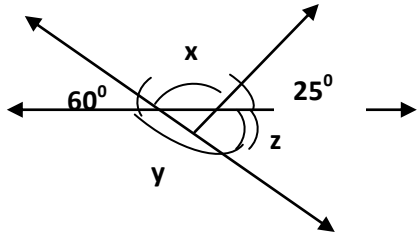
a) 135^0 b) 87^0 c) 39^0 d) 112^0

3) **Find the supplement of the angles :**

a)

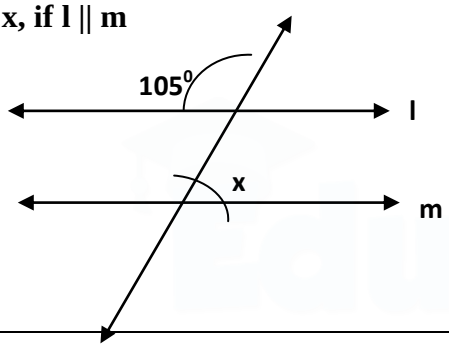


b)

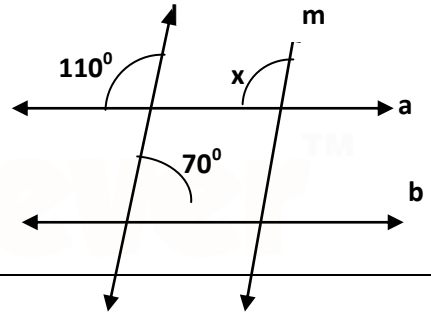


4) **Find x, if l || m**

a)



b)



VII – MATHS WORKSHEET

Chapter 3 : Data Handling

1) Following are the weights (in kg) of 8 students of a class

48.5, 50, 44.5, 49.5, 50.5, 45, 51, 43

a) Find the mean weight.

b) What will be the mean weight if a student, whose weight is 62kg, is also included?

2) Find the arithmetic mean of the scores

8, 6, 10, 12, 1, 3, 4, 4. Find the range of the data.

3) Find the mean of the 1st three composite numbers.

4) The heights of 10 girls were measured in cm and the results were as follows.

143, 148, 135, 150, 128, 139, 149, 146, 151, 132

a) What is the height of the tallest girl?

b) What is the height of the shortest girl?

c) What is the range of the data?

d) Find the mean height ?

e) Find the number of girls whose heights are less than the mean height ?

5) Find the mean of the 1st ten natural numbers.

6) Two different states of India's experts of garments in the years 2000 to 2005 are given in the following table

Year	2000	2001	2002	2003	2004	2005
Kerala (in crores of Rs)	5	6	8	10	12	14
Karanataka (in crores of Rs)	10	11	9	12	8	13

(i) Draw a double bar graph to represent the data

(ii) What are the total earnings in the years 2002 and 2004 both the states separately?

7) Find the mode, mean and median of the scores

4, 5, 6, 7,7, 8, 9, 13, 12, 8, 8, 9, 8, 10, 11

VII – MATHS WORKSHEET

8) Marks obtained by two girls of VII A in final term exam (out of 100) as follows :

Subjects	English	Hindi	Mathematics	Science	Social
Sunita	75	80	92	84	62
Vandhana	72	84	92	65	70

1) **Draw a double bar graph to represent the following data.**
2) **Who did better in the examination**

9) The number of hours of television programme watched on Sunday in 40 houses were as follows

9	5	4	3	4	4	9	9	8	9
9	5	10	9	10	10	10	4	9	6
7	9	5	9	9	8	6	7	9	6
6	5	9	9	8	7	8	10	10	9

1) **Organise the following numbers in a tabular form.**
2) **Estimate the mean, median and mode of this distribution.**
3) **What is the range of the data?**

10) A bag contains 3 red and 2 blue marbles. A marble is drawn at random. What is the probability of drawing a blue marble.

11) A box of 600 electric bulbs contains 12 defective bulbs. One bulb is taken out at random from this box. What is the probability that it is a non defective bulb ?

12) What is the probability of getting
- **(i) an even number**
- **(ii) a multiple of 3**
- **(iii) a number 3 or 4**
- **(iv) an odd number**
- **(v) a number between 3 and 6**

VII – MATHS WORKSHEET

4.Integers

1) **Verify $a-(-b) = a + b$ for the following values of 'a' and 'b'.**

   (a) **a = 75, b = 84**

   (b) **a = 118, b = 125**

   (c) **a= 25, b = 30**

2) **Write down a pair of integers whose**

   (a) **Sum is − 3**

   (b) **Sum is 0**

   (c) **Difference is 2**

   (d) **Difference is − 5**

3) **Verify the following :**

   a) $(-21) \times [(-4) + (-6)] = [(-21) \times (-4)] + [(-21) \times (-6)]$

   b) $15 \times [6 + (-3)] = [15 \times 6] + [15 \times (-3)]$

   c) $(-15) \times [(-8) + (-6)] = [(-15) \times (-8)] + [(-15) \times (-6)]$

4) **Evaluate :**

   a) $(-100) \div 5$

   b) $(-36) \div (-4)$

   c) $(-41) \div [(-40) + (-1)]$

   d) $0 \div (-18)$

   e) $[(-36) \div 12] \div 3$

   f) $(-50) \div (50)$

   g) $60 \div (-6)$

   h) $(-48) \div -48$

i) $(-13) \div (13)$

5) **Do as directed :**

1. **In a test (+5) marks are given for every correct answer and (-2) marks are given every incorrect answer.**

(i) **Radhika answered all the questions and scored 30 marks though she got 10 correct answers.**

(ii) **Jay also answered all the questions and scored (-12) marks though he got 4 correct answers. How many incorrect answers had they attempted ?**

6) **In a class test containing 15 questions 4 marks are given for every correct answer and (-2) marks are given for every incorrect answers :**

i) **Gurupreet attempts all question but only 9 of her answers are correct. What is her total score ?**

ii) **One of her friends gets only 5 answers correct. What will be her score ?**

7) **Write five pairs of integers (a, b) such that a÷b = −6.**

8) **Find**

i) $(-3) \times (-6) \times (-2) \times (-1)$

ii) $(-12) \times (-11) \times (10)$

iii) $(-320) \times (-1)$

iv) $(-18) \times 0 \times (-16)$

v) $9 \times (-5) \times (-3)$

vi) $(-41) \times 10$

vii) $(-21) \times (-30)$

viii) $(-1) \times 225$

ix) $(-22) \times (-1)$

x) $(-20) \times (-2) \times (-5) \times 7$

VII MATHS WORKSHEET

9) Use the sign > , < , =

i) $29 + (-18) - 15$ ☐ $36 - (-15) + 28$

ii) $-241 + 76 + 86$ ☐ $-399 + 163 + 45$

iii) $(-3) + 7 - (-18)$ ☐ $18 - 9 + (-6)$

iv) $(-8) + (-6)$ ☐ $(-8) - (-6)$

v) $(-18) + (18)$ ☐ $(-31) + (31)$

vi) $86 - 45 + 23$ ☐ $-36 - (20) - (-8)$

10) In a quiz, positive marks are given for correct answers and negative marks are given for incorrect answers. If Jack's scores in five successive rounds were 65, $-10, -15, 20, 30$. What was his total score at the end.

11) In a quiz , team A scored $-50, 30, 0$ and team B scored 60, 30, -40 in three successive rounds. Which team scored more ?

12) The temperature at 12 noon was 10^0C above zero. If it decreases at the rate of 2^0C per hour until midnight, at what time would the temperature be 8^0C below zero? What would be the temperature at mid – night ?

13) Replace the blank with an integer to make it a true statement.

a) _____ $\times (-12) = -60$

b) $5 \times$ _____ $= -35$

c) $(-8) \times$ _____ $= 72$

d) _____ $\div (-3) = 9$

e) $(-20) \div$ _____ $= 5$

VII – MATHS WORKSHEET

Answers :

2.Lines & Angles

1. **a) 34^0** **b) 43^0** **c)78^0** **d) 9^0**

2. **a) 45^0** **b)93^0** **c)141^0** **d)68^0**

3. **a) x =49^0 y = 131^0 z = 131^0**

b) x =95^0 y = 120^0 z = 60^0

4. a) x = 75^0 b) x = 110^0

Chapter 3 : Data Handling

10) $\frac{2}{5}$ **11)** $\frac{49}{50}$ **12) (i)** $\frac{1}{2}$ **(ii)** $\frac{1}{3}$ **(iii)** $\frac{1}{3}$ **(iv)** $\frac{1}{2}$ **(v)** $\frac{1}{3}$

Chapter 4 : Integers

4) a) -20 $b)\ 9$ **c) 1** **d)0** **e)** -1 **f)** -1 **g)** -10

h) 1 **i)** -1

5) Sol : (i) 10 **(ii) 16** **6) Sol : (i) 24** **(ii) 0**

8) (i) 36 **(ii) 1320** **(iii) 320** **(iv) 0** **(v) 135**

(vi) -410 **(vii) 630** **(viii)** -225 **(ix) 22** **(x)** -1400

9) (i) < (ii) > (iii) > (iv) < (v) = (vi) >

10) Sol : 90 **11) Sol : Team A Marks − 20**

Team B Marks 50

12) Sol : 9pm ; -14^0C

13) Sol : a) 5 **b)** -7 **c) 9** **d) 27** **e)** -4

VII – MATHS WORKSHEET

5. EXPONENTS & POWERS

1. **Find the value of each of the following**
   a. 13^2
   b. 5^3
   c. 2^4
   d. 11^2
   e. $(-3)^3$
   f. $(-1)^6$
2. **Simplify**
   a. 3×10^2
   b. $2^5 \times 5^3$
   c. 0×10^4
   d. $\left(\frac{3}{4}\right)^3$
   e. $\left(\frac{-2}{3}\right)^4$
3. **Express each of the following in exponential form**
   a. $\left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right) \times \left(\frac{-5}{7}\right)$
   b. $-5 \times -5 \times -5$
   c. $x \times x \times x \times x \times a \times a \times b \times b \times b$
   d. $(-2) \times (-2) \times (-2) \times (-2) \times a \times a \times a$
4. **Express each of the following numbers as a product of powers of their prime factors.**
   a. 36 b. 675 c. 392 d.864 e. 450 f.1800
5. **Using laws of exponents , simplify**
   (i) $3^6 \times 3^5$
   (ii) $(7^2)^3 \div 7^3$
   (iii) $2^{20} \div 2^5$
   (iv) $2^4 \times 5^4$
   (v) $(2^0 + 3^0)(4^0 + 6^0)$
   (vi) $\frac{7^3}{5^3}$
6. **Simplify and express each of the following in exponential form :**
   (i) $\frac{2^{15}}{2^7 \times 2^3}$ (ii) $(3^5 \times 3^2)^3$ (iii) $[(2^3)^4 \times 2^8] \div 2^{12}$
   (iv) $\frac{5^4 \times x^{10} y^5}{5^4 \times x^7 y^4}$ (v) $\left(\frac{2}{3}\right)^5 \times \left(\frac{3}{5}\right)^5$ (vi) $\frac{9^8 \times (x^2)^5}{(27)^4 \times (x^3)^2}$

(vii) $\frac{3^2 \times 7^8 \times 13^6}{21^2 \times 91^3}$ (viiii) $\frac{10 \times 5^{n+1} + 25 \times 5^n}{3 \times 5^{n+2} + 10 \times 5^{n+1}}$

7. Write the numbers in expanded forms :

a) 20068 (b) 423719 (c) 680071 (d)5004132

8. Find the number :

(a) $5 \times 10^5 + 4 \times 10^4 + 2 \times 10^3 + 3 \times 10^0$

(b) $9 \times 10^6 + 8 \times 10^4 + 7 \times 10^2 + 6 \times 10^0$

(c) $3 \times 10^4 + 4 \times 10^3 + 5 \times 10^0$

9. Express in the standard form :

(a) 3,18,65,00,000 (b) 786.3×10^4 (c) 5,00,00,000

(b) 42634.7 (d) 4786. 3460

10. Write the numbers in the usual form :

(a) 4.83×10^7 (b) 3.64×10^5 (c) 7.3×10^3

VII – MATHS WORKSHEET

Answers :

1) (a) 169 (b) 125 (c) 16 (d) 121 (e) -21 (f) +1

2) (a) $3 \times 100 = 300$ (b) $4 \times 125 = 600$ $(c)0$ $(d)\frac{9}{16}$ (e) $\frac{16}{81}$

4) (a) $3^2 \times 2^2$ (b) 5^4 (c) $2^3 \times 7^2$ (d) $2^5 \times 3^3$
(e) $2 \times 3^2 \times 5^2$ (f) $2^3 \times 3^2 \times 5^2$

5) (i) 3^{11} (ii) 7^3 (iii) 2^{15} (iv) $(10)^4$ (v) 4
(vi) $\left(\frac{7}{5}\right)^3$

6) (i) 2^5 (ii) 3^{21} (iii) 2^8 (iv) x^3y (v) $\left(\frac{2}{5}\right)^5$ (vi) $(3x)^4$
(vii) $7^5 \times 13^5$ (viii) $\left(\frac{3}{5}\right)$

Edutavar™

MATHS WORKSHEET

6. ALGEBRAIC EXPRESSIONS

I Fill in the blanks :

a. 4xy + 2xy is a _____
(bionomial, trinomial, monomial)
b. The product of twice of 'a' and thrice of 'b' _____
c. The constant term of $12 + 19a^3b^2$ is _____
d. The like terms of a^2b, $-b^2a$, $-5ba^2$, $5ab$, $3a^3b$, $4ab^3$ are _____
e. The value which satisfies an equation is called its _____
f. Algebraic terms that have the same algebraic factors are called _____.
g. The numerical factor of a term is called _____.
h. A _____ is product of factors.
i. Any expression with one or more terms is called a _____.
j. A combination of constants and variables connected by the signs of the fundamental operations is called _____

II.
a. (p-q) – (p+q) = _____
b. _____ should be subtracted from $3x^3 - 1$ to get x^3
c. The sum of $-4pqr$, $5pqr$ and $7pqr$ is _____
d. The (x+2) + (x-2) = _____

III
a. Find the sum of $2x^2 - 3y^2$, $9x^2 + 6y^2$, $-3x^2 - 5y^2$
b. Subtract $(a^2 + b^2 + 2ab)$ from $(a^2 + b^2 – 2ab)$
c. Write the term containing a^2 and find its coefficient
i) $16a^2 – 4b^2 + 10$ ii) $22b^2 - a^2$
d. Simplify $2(x^2 + 2xy) + 5 – xy – y^2$
e. Find the value of the given expressions when a=0, b=-1, c=1
i) $a^3 – b^3$ ii) $a^2 + 2ab + b^3$ iii) $3ab + 3ac + c^2$
iv) $\frac{5a}{10} - 4b$