BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Whole Numbers

FILL IN THE BLANKS:

1. The whole number which is not a natural number is _____ .

2. The natural number whose predecessor does not exist is _____ .

3. There are _____ whole numbers up to 75.

4. Predecessor of 2, 90, 099 is _____ .

5. There are _____ natural numbers up to 80.

6. The additive identify for whole numbers is _____ .

7. The statement $(3 + 5) + 6 = 3 + (5 + 6)$ shows that addition of whole numbers is _____ .

8. _____ is the multiplicative identity of whole numbers.

9. $6 \times (7 + 3) = (6 \times 7) + (6 \times 3)$. This statement shows that multiplication of whole numbers is _____ over addition.

10. $(3 \times 5) \times 9 = 3 \times (5 \times 9)$. This statement shows that multiplication of whole number is _____ .

11. _____ is the only whole number which when divided by it self gives a quotient equal to itself.

DO THE FOLLOWING:

1. How many times does the digit 5 occur in tens place in the natural numbers from 100 to 1000?

2. How many times does the digit 9 occur in the units place in all the natural numbers up to 100 ?

3. Find the sum by suitable rearrangement.

   a) $534 + 100 + 466$
   b) $365 + 700 + 635$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

4.   Add each of the following and check by reversing the order to the addends.

   (a) 3025 + 1825   (b) 2094 + 2942

5.   Find the product using properties of whole numbers.

   (a) 155 x 601   (b) 1800 x 499   (c) 71 x 380.

6.   Find the value of the following expressions using properties of whole numbers.

   (a) 4, 380 x 85 - 4, 380 x 75

   (b) 270 x 8 + 270 x 9 + 270

   (c) 45 x 20 x 5

7.   Find the quotient and remainder in each of the following divisions. Check the answer by division algorithm.

   (a) 4, 567 ÷ 234   (b) 3, 645 ÷ 15   (c) 7, 654 ÷ 19

8.   The product of two numbers is 3, 75, 200. If one of the numbers is 160 .   Find the other?

9.   On dividing   4, 56, 789 by a certain number the quotient is 1, 952 and a remainder 21 is left. Find the number.

10.   Divide the largest   4 – digit number by the largest 2 digit number and write down the quotient and the remainder.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Negative Numbers And Integers

I.   ANSWER THE FOLLOWING:

1.   Which is the smallest positive integer?

2.   Which is the greatest negative integer?

3.   Write absolute value of   a) $|-13|$ b) $-|-30|$

4.   Which integer is neither positive nor negative?

5.   Write the opposite of -875.

6.   Which is greater: -41 or -14 ?

7.   Write the integer which is 5 more than -5 .

8.   Find $(-19) + 9$.

9.   Replace * by   < or >

   i) $-3 * 3$ ii) $0 * -125$

10. Subtract -1140 from -780.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

II.	ANSWER THE FOLLOWING:
1.	Write all integers belween -35 and -31.
2.	Sum of two integers is 1890. If one of them is -412. Find the other integer.
3.	Fill the boxes with $<$ or $>$ i) $(-9) + (-6) \boxed{} (-6) - (-9)$
4.	Add i) - 2050 ii) 396 c) - 493 $\underline{\quad + \ 687\quad}$ $\underline{\quad -159\quad}$ $\underline{\quad + 108\quad}$ $\underline{\qquad}$ $\underline{\qquad}$ $\underline{\qquad}$
5.	Simplify i) $-37 + 28 - 6 + 23$ ii) $1 - 3 + 5 - 7 + 9 - 11 + 13 - 17$ iii) $0 + 2 - 4 + 6 - 8 + 10 - 12 + 14$
6.	Represent all integers belwees -5 and $+3$ on the number line.
7.	Write the integer which is i) 3 more than -2 (ii) 4 less than -1 iii) -2 more than -5 iv) -3 less than -4 Show answers on number line.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

8.   Arrange in increasing and decreasing order.

i) -12 , 0 , 7 , -9 , 8 , -8 , -14

ii) -3, 2, -5 , 10 , 11 , -15 , 6 , 25

ii) -6 , 0 , -5 , -7 , 3, 4, -16 , 8

9.   Find the value of   i) $9 - /-7/$ ii) $-/-15/$ iii) $26 - /-10/ + /-13/$

iv) $4 + /-4/ + 4 + /-4/$

10.   Draw a number line and answer the following:

   a) Which number will we reach if we move 3 number to the left of -5 .
   b) If we are at $+3$ in which direction should we move to reach -10.

Class VI. BPS Maths Worksheet   Page 5

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Playing With Numbers

I)Choose the correct answers :

1. HCF of two consecutive even numbers

    a) 1   b)2   c)3   d)4

2. LCM of two Prime numbers is

    a) their sum

    b) their difference

    c) their product

    d) none of these.

3. The Prime factorization of 126 is

    a) $2 \times 2 \times 3 \times 6$

    b) $2 \times 3 \times 3 \times 7$

    c) $2 \times 3 \times 3 \times 4$

    d) none of these

4. The fundamental theorem of Arithmetic states that :

    a) every number greater than 1 has many factors.

    b) every number greater than 1 has exactly one Prime factorization.

    c) every number greater than 1 has many multiples.

    d) none of these

5. The number which is divisible by 9 is

    a) 7802   b)8100 c)3271 d) none of these

II) Find the value of

    a) $4 + 3 \times (5 + 3)$

    b) $6 \times 8 - 25 \div 5 + 3$

    c) $12 \div (4 + 2) - 3 \times 5 + 7 \times (3+1)$

III) Simplify :

    a) $125 - [18 - \{28 \div 4 - (18 - 30 \div 5) \div 2\}]$

    b) $5[18 + \{3 + 4(5 - 2)\}]$

    c) $130 - [100 \div (2 \text{ of } 5) - \{8 - \overline{4 - 2}\}]$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

IV) Using divisibility tests, determine which of the following number are divisible by 2,3,4,5,6,8 and 9.

     a) 14560   b)726352   c)12159   d)12150   e)639210

V)Determine HCF of numbers given below by Prime factorization method.

     a) 36, 84   b)34, 102   c)27,63

VI) Determine HCF of numbers given below by continued division method.

     a) 28, 36   b)880, 1375   c)255, 1620

VII) Determine LCM of

     a) 16, 24, 40   b)18, 24, 32   c)32, 56, 46

VIII) Write the numerical expression for each of the following using brackets :

     a) Nine subtracted from the product eight and seven.

     b) Seventy two divided by the sum of six and three.

     c) Four multiplied by the sum of two and five.

IX.   1) Express 71 as the sum of three odd primes.

     2) Express 24 as the sum of twin Primes.

     3) Find all Prime numbers between 70 and 90.

X.   1) Find the least number which when divided by 6,15 and 18 leave remainder 5 in each case.

     2)Find the least number which divided by 12, 16, 24 and 36 leave.   remainder 7 in each case

     3) Find the greatest number which divides 1,628 1,736 and 268 leaving remainders 8, 11 and 13 respectively.

     4)Find the largest number which divides 146, 254 and 272 leaving a remainder 2 in each case.

     5) Find the smallest 4 digit number which is divisibly by 18,24 and 32.

     6) Write the smallest 5 – digit number and find its factors.

     7) For each of the following pair of numbers , verify that

          LCM $\times$ HCF = Product of the numbers.

     (i) 21, 28

     (ii) 231 and 273

     (iii) 36, 90

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Whole Numbers

1) The smallest whole numbers is _____

2) The predecessor of 10049 is _____

3) The natural number whose predecessor does not exist is _____

4) The additive identity for whole numbers is _____

5) $(7 + 8) + 3 = 7+(8+3)$ _____ property.

6) _____ is the successor of the biggest 3 digit number.

7) _____ is the identity for multiplication of whole numbers.

8) Division by zero is _____

9) _____ + 2417 = 2417

10. $52 \times 18 = 18 \times (- +-)$

11. In a division sum, the dividend , divisor and quotient are the same . Which is that no _____

12. $420 \times 132 - 420 \times 32 = 420 \times ($ $)$

13. $63 \times 106 = 63 ($ _____ $+$ _____ $)$

14. The value of $13 \div 0$ is _____

15. All natural numbers are whole numbers (True/ False)

16. How many whole numbers are there up to 80 ?

17. Whole numbers are closed for division (True / False)

18. How many times does the digit 4 occur in the unit place in all the natural numbers up to 100?

19. Write the successor and predecessor of each of the following numbers :

a) 7000   b) 1899   c)40040   d)69999   e)64494   f)3300301

20. Write the next 3 consecutive natural numbers :

a) 410436   b)48998   c)73299

21.Find the following using number line :

a) $6 + 3$ b)$12 - 5$ c)6×2 d) $3 + 4$ e)$4 - 1$ f) 4×3

22. Find the following sum by suitable rearrangement :

a) 729 + 123 + 877 +271

b) 594729 +550023 +6912037+732981

c)14 + 438 +486 +162

d) 2062 +353 +1438 +547

Class VI. BPS Maths Worksheet   Page 8

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

23. Find the value of the following using properties of whole numbers.

a) $786 \times 84 + 786 \times 16$

b) 242×102

c) $4 \times 821 \times 25$

d) $741 \times 124 - 741 \times 24$

e) $370 \times 6 + 370 \times 3 + 370$

f) 998×126

24. The annual fee charged from a student of class VI in a school is SR135 and class VII is SR 165. If there are in all 235 students in class VI and VII. Find the total collection.

25. On dividing 43, 621 by a certain number, the quotient is 1,246 and the remainder is 11 . Find the divisor.

26. What is the smallest 4 – digit number that is exactly divisible by 21.

27. The product of two number is 118275 . If one of the number is 1425, Find the other ?

28. A dealer sold 155 radio set on Monday and 245 on Tuesday. If the cost of one radio set is Rs. 3050. What is the total amount is collected during these days.

Prepared by Mrs. Saira Nazar, VI – VIII Girls, IISR

Class VI. BPS Maths Worksheet

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Integers

1. Using number line find the following :

 i. $-3+5$

 ii. $-4+-3$

 iii. $5+ \; -2$

 iv. $-5+3$

 v. $-3-(-2)$

 vi. $5-(-2)$

 vii. $-4-(+1)$

 viii. $-7+4$

 ix. $3 \; more \; than \; -5$

 x. $-2 \; more \; than \; -3$

 xi. $-2 \; less \; than \; -4$

 xii. $3 \; less \; than \; -2$

 xiii. $-4 \; less \; than \; -1$

2. Evaluate the following :

 1. $-25+72$

 2. $-75+-32$

 3. $25-79$

 4. $-32-(-58)$

 5. $48-(-92)$

 6. $-85+78$

 7. $-95-99$

 8. $-105+105$

 9. $-28-108$

 10. $-203+702$

 11. $-405+(-208)$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

12. $-300 - (-215)$

13. $500 - 700$

14. $-200 + 150$

15. $-173 + -293$

16. $-28 + 75 + -56 + -28$

17. $-108 - (-210) - 408 + 709$

18. $+739 - 710 - (-210) + (-80)$

19. $709 + 483 - 1009 + (-403)$

20. $208 - [-73 - (43 - 78)]$

21. $513 - \{-89 - [58 - (7 - \overline{8 - 10})]\}$

22. $-403 + [703 - (-48) + (-1085)]$

23. $-4532 + -7351 + 1532$

24. $728 - (-425) - 9285$

25. $-58 + 98 - 40$

26. $-403 - (-375) + 102$

27. $-459 - 729 - (-358) + -2085$

28. $-78 - (-532)$

2. Use '<' or '>' or '=' to fill the box to get the

1. $-138 \boxed{} - (-138)$

2. $-728 \boxed{} 0$

3. $-238 \boxed{} -347$

4. $-41 \boxed{} -8$

5. $32 \boxed{} -78$

6. $-97 \boxed{} -79$

7. $0 \boxed{} -79$

8. $-438 \boxed{} -458$

9. $48 \boxed{} 408$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

3. Complete the blanks :

1. $-28, -38, -48,$ _____, _____, _____, _____

   $-287, -277, -267,$ _____, _____, _____, _____

2. $-589, -586, -583,$ _____, _____, _____, _____

   $-13, -8, -3,$ _____, _____, _____, _____ 4.

Write the opposite of the following :

1. 739 above sea level.

2. Going 730m towards north

3. -413

4. $+705$

5. *Depositing Rs 750.*

5. Fill up the blanks :

1. _____is neither positive nor negative.

2. _____is the smallest positive integer.

3. _____is the greatest negative integer.

4. All positive integers are _____than zero and negative integers.

5. All negative integers are _____ than zero and positive integers.

6. $-8 +$ _____ $= 0$

7. $-78 +$ _____ $= -68$

8. $48 +$ _____ $= 0$

10. $69 +$ _____ $= +56$

11. $-32 +$ _____ $= -45$

12. $+100 +$ _____ $= 80$

13. $43 + -35 =$ _____

14. $43 -$ _____ $= 52$

15. _____ $- (-9) = 61$

16. _____ $+ -8 = 52$

17. $-27 +$ ____ $= -35$

18. $-48 -$ _____ $= 0$

Class VI. BPS Maths Worksheet   Page 12

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Fractions

Q1. Fill in the blanks.

1. An improper fraction of $8\frac{4}{9}$ is _____

2. $\frac{7}{21} + --- = \frac{12}{21}$

3. The equivalent fraction of $\frac{3}{5}$ having numerator 24 is _____

4. Fractions with same denominators are called _____

5. Which is greater $\frac{3}{8}\ or\ \frac{3}{5}$

6. What fraction of a day is 6 hours?

7. Is $\frac{5}{9}$ equals to $\frac{4}{5}$?

8. A fraction is said to be in the simplest (or lowest) form if its numerator and denominator have no common factor except _____.

9. In an improper fraction, the numerator is _____ than the denominator.

10. The simplest form of $\frac{18}{36}$ is _____

Q2. Compare the following. [<, >, =]

1. a) $\frac{8}{15}\ \square\ \frac{4}{15}$

   b) $\frac{4}{7}\ and\ \frac{3}{8}$

   c) $\frac{5}{8}\ and\ \frac{5}{7}$

2. Show $\frac{3}{5}, \frac{5}{5}\ and\ \frac{7}{5}\ on\ a\ number\ line.$

Q3. Express as mixed fractions.

a. $\frac{17}{7}$

b. $\frac{38}{5}$

Class VI. BPS Maths Worksheet

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

c. $\dfrac{19}{6}$

Q4. Express as improper fractions.

a. $3\dfrac{2}{8}$

b. $5\dfrac{7}{8}$

c. $4\dfrac{1}{3}$

Q5. Find the equivalent fraction form.

a. $\dfrac{66}{99}$

b. $\dfrac{32}{48}$

c. $\dfrac{21}{24}$

Q7. Find the equivalent fraction of $\dfrac{7}{15}$ with numerator 35?

Q8. Find the equivalent fraction of $\dfrac{45}{54}$ with numerator 5?

Q9. Write the natural numbers between 50 to 65 what fraction of them are prime numbers?

Q10. Solve.

a. $\dfrac{5}{12} - \dfrac{3}{4}$

b. $2\dfrac{1}{5} + 4\dfrac{3}{4}$

c. $4\dfrac{4}{5} - 3\dfrac{7}{9}$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

d. $\frac{1}{4} + \frac{1}{5} + \frac{1}{6}$

e. $1 - \frac{3}{5}$

f. $4 - \frac{1}{2}$

Q11. Raju had $\frac{5}{9}$ of a cake. He gave $\frac{2}{9}$ out of that to his sister. How much is left?

Q12. Meena bought $2\frac{1}{4}$ kg of vegetables and Reena bought $3\frac{1}{2}$ kg of vegetables. Find the total weight of vegetables bought by both of them.

Q11.Find the sum.

a) $4\frac{1}{2} + \frac{1}{10} + 3\frac{1}{5}$

b) $2\frac{1}{8} + 1\frac{1}{16} + \frac{3}{4}$

c) $8\frac{4}{9} + 5\frac{1}{3}$

Q12.Subtract.

a) $4\frac{5}{8} - 3\frac{3}{16}$

b) $3\frac{1}{15} - 2\frac{1}{5}$

c) subtract $\frac{3}{4}$ from $3\frac{1}{7}$

d) Subtract $\frac{4}{9}$ from 6.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Fractions

I. | Important Points.

1. Fraction whose Numerators are less than denominators are called <u>Proper fractions.</u>

2. Fractions whose Numerators are greater than Denominators an called <u>Improper fractions.</u>

3. If the Numerators of a fraction is less than Denominator the fraction is less than 1.

4. If Numerator of a fraction is greater than denominator then the fraction is more than 1.

5. If Numerator is equal to the Denominator than the fraction is equal to 1.

6. A Fraction with numerate 1 is called <u>UNIT FRACTION.</u>

7. The Fraction is said to be in the lowest term or in simplest form if the H.C.F. of its numerator and the denominator is 1.

8. A group of fraction with the same denominator are called <u>LIKE FRACTIONS</u>.

9. A group of fraction with the different denominators are called <u>UNLIKE FRACTIONS.</u>

10. Different fractions represents the same part are called <u>EQUIVALENT FRACTIONS.</u>

11. Proper fractions are always less than 1.

12. Improper fractions are greater than or equal to 1.

13. Of the two fractions with same numerator, the fraction with greater denominator is smaller.

14. Of the two fractions with same denominator the fraction with greater numerator is greater.

II. | Solve the following

(i) $\dfrac{2}{7} = \dfrac{8}{\boxed{}}$ (ii) $\dfrac{5}{8} = \dfrac{10}{\boxed{}}$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

(iii) $\dfrac{3}{5} = \dfrac{8}{20}$ (boxed)   (iv) $\dfrac{45}{60} = \dfrac{15}{\Box}$

(v) $\dfrac{18}{24} = \dfrac{\Box}{4}$ (vi) $\dfrac{2}{9} = \dfrac{\Box}{63}$

(vii) $\dfrac{15}{35} = \dfrac{\Box}{7}$ (viii) $\dfrac{4}{5} = \dfrac{\Box}{140}$

(ix) $\dfrac{8}{64} = \dfrac{\Box}{8}$ (x) $\dfrac{12}{72} = \dfrac{2}{\Box}$

III.   Reduce the following fractions in to simplest form.

(i) $\dfrac{48}{60}$ (ii) $\dfrac{150}{60}$ (iii) $\dfrac{84}{98}$

(iv) $\dfrac{12}{52}$ (v) $\dfrac{7}{28}$ (vi) $\dfrac{36}{24}$

(vii) $\dfrac{112}{128}$ (viii) $\dfrac{63}{189}$ (ix) $\dfrac{90}{104}$ (x) $\dfrac{72}{120}$

Class VI. BPS Maths Worksheet   Page 17

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

IV.   Find an equivalent fraction of

$$\frac{3}{5}$$ having

(a) Denominator   20

(b) Numerator   36

(c) Denominator   75

(d) Numerator   45

(e) Denominators   125

V.   Find an equivalent fraction of

$$\frac{16}{144}$$ having

(a) numerator   2

(b) denominator   72

(c) numerator   4

(d) numerator   1

VI.   Change the following into improper fraction

(i) $\frac{2}{5}$ (ii) $\frac{2}{5}$ (iii) $\frac{3}{7}$

(iv) $\frac{5}{7}$ (v) $\frac{18}{23}$ (vi) $\frac{7}{9}$

Class VI. BPS Maths Worksheet   Page 18

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

VII.   Change the following into mixed number

(i) $\dfrac{8}{3}$ (ii) $\dfrac{16}{3}$ (iii) $\dfrac{54}{7}$ (iv) $\dfrac{209}{14}$

(v) $\dfrac{67}{13}$ (vi) $\dfrac{98}{23}$ (vii) $\dfrac{145}{12}$ (viii) $\dfrac{37}{9}$

VIII.   Which of the following pair of fraction are equivalent?

(i) $\dfrac{6}{13}$ and $\dfrac{30}{65}$ (iv) $\dfrac{4}{9}$, $\dfrac{32}{72}$

(ii) $\dfrac{16}{20}$, $\dfrac{20}{35}$ (v) $\dfrac{12}{44}$, $\dfrac{21}{76}$

(iii) $\dfrac{8}{15}$, $\dfrac{40}{75}$ (vi) $\dfrac{11}{17}$, $\dfrac{55}{85}$

IX.   Fill in the blanks by putting   < ,   > ,   a   =

(i) $\dfrac{7}{11}$ _ $\dfrac{5}{11}$ (ii) $\dfrac{17}{19}$ _ $\dfrac{9}{19}$

Class VI. BPS Maths Worksheet   Page 19

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

(ii) $\dfrac{3}{21} - \dfrac{21}{21}$ (iv) $\dfrac{5}{8} - \dfrac{5}{16}$

(v) $\dfrac{13}{20} - \dfrac{17}{20}$ (vi) $\dfrac{18}{25} - \dfrac{18}{24}$

X.   Arrange the following in Ascending and descending order.

(i) $\dfrac{15}{14}$, $\dfrac{15}{8}$, $\dfrac{15}{19}$, $\dfrac{15}{3}$

(ii) $\dfrac{2}{17}$, $\dfrac{15}{17}$, $\dfrac{9}{17}$, $\dfrac{13}{17}$

(iii) $\dfrac{11}{9}$, $\dfrac{23}{9}$, $\dfrac{15}{9}$, $\dfrac{7}{9}$

(iv) $\dfrac{15}{23}$, $\dfrac{25}{23}$, $\dfrac{9}{23}$, $\dfrac{16}{23}$

(v) $\dfrac{17}{8}$, $\dfrac{17}{16}$, $\dfrac{17}{5}$, $\dfrac{17}{11}$

Class VI. BPS Maths Worksheet   Page 20

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

XI. Solve

(i) $\dfrac{1}{5} + \dfrac{3}{10}$ (ii) $\dfrac{2}{4} + \dfrac{1}{6} + \dfrac{5}{12}$

(iii) $\dfrac{3}{10} + \dfrac{1}{15}$ (iv) $\dfrac{7}{15} + \dfrac{2}{5}$

(v) $\dfrac{5}{6} + \dfrac{7}{12} + \dfrac{1}{9}$ (vi) $\dfrac{9}{16} \quad \dfrac{5}{12}$

(vii) $\dfrac{5}{14} - \dfrac{2}{7}$ (viii) $\dfrac{5}{16} - \dfrac{5}{24}$

(ix) $3 - \dfrac{4}{5}$ (x) $\dfrac{5}{6} - \dfrac{7}{12}$ (xi) $\dfrac{31}{15} - \dfrac{5}{6}$

XII. Find the difference between.

(i) $\dfrac{7}{15}$ and $\dfrac{9}{10}$ (ii) $\dfrac{2}{24}$ and $\dfrac{15}{18}$

(iii) $\dfrac{5}{18}$ and $\dfrac{11}{12}$ (iv) $\dfrac{2}{7}$ and $\dfrac{5}{14}$

(v) $\dfrac{13}{18}$ and $\dfrac{7}{11}$ (vi) $\dfrac{5}{12}$ and $\dfrac{13}{15}$

Class VI. BPS Maths Worksheet   Page 21

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Playing With Numbers

I. Fill in the blanks

1. The value of 6 x 45 ÷ 9+3 is -----------------.

2. The numerical expression for six multiplied by the sum if three and four is ----------------

3. The numerical expression for seven subtracted from the product of four and three is

4. Numerical expression for forty five divided by the difference of eight and three is

5. The number of factors of a number are ------------ and multiples of a number are ----- .

6. Two consecutive odd prime numbers are known as -------------- .

7. A set of three consecutive prime numbers differing by 2 is called a -------

8. Two numbers are said to be ------------ if they do not have a common factor other than 1.

9. The smallest composite number is -------------.

10. HCF of two prime numbers is ------------ .

11. HCF of two consecutive even numbers is ------------ .

12. LCM of two prime consecutive numbers is ------------ .

13. LCM of two consecutive numbers is ------------ .

14. ----------- is neither a prime number nor a composite number.

15. A number for which sum of all its factors is equal to twice the number is called a --------

II.DO THE FOLLOWING

1. Find the value of a) $63 ÷ (4+7)$ (b) $17 +24 ÷ 6 - 3$

   c) $4 x 3 – 20 ÷ 5 +8$ (d) $25 – 27 ÷ (6 +3)$

2. Simplify:-

   ___

 a) $35 + \{16 -7 +(3+5)\}$ b) $148 – [150 ÷ 3$ of $5 – \{ 20- 9-3\}]$

      c) $6 [24 + \{4 + 3(6 -2)\}]$

3. Write all prime numbers between1 and 50.

4. Express the following as the sum of twin primes a) 84 b) 36 c) 24 d) 42

5. Express the following as the sum of two odd primes a)36   b)68 c)24 d) 42

6. Using divisibility test check whether the following are divisible by 4 and 8.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

7. Test the divisibility by 6   a) 27840 b) 29400   c) 35684

8. In each of the following fill in the blank with the smallest digit to make it divisible

   by 3.   a) 643 -5   b) 2134 -7   c) 39821-7

9) Fill in the blank with the smallest digit to make it divisible by 9.

 a) 563 – 3 b)1679 – 1 c)23 -523

10. Write the smallest 5 digit number and find its prime factors

11. Determine the HCF of the given numbers by prime   factorisation method.

     a) 72, 120   b) 46, 78   c) 225, 350

12. The product of three consecutive numbers is always divisible by 6. Verify this statement with the help of some examples.

 13. Determine the HCF by continued division method.

  a) 255, 1620   b) 880, 1375   c) 72, 126

14.Find the largest number which divides 226 and 311 leaving a reminder of 5 in each case.

15.For each of the following pairs of numbers verify that:LCM x HCF = Product of the

   numbers. a) 231,273   b) 104, 195   c) 36, 90

 16. Find the smallest number which when divided by 15, 25 and 35 leaves a remainder 5 in each case.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Decimals

1)   Express as rupees using decimals .

a) 640p

b) 29p

c) 4p

d) Rs25,50paise.

e) Rs 1,50p

2)   Express as Kg using decimals.

a) 40g

b) 2kg 400g

c) 5g

d) 4312g

e) 804kg 60g

3) Express as meters using decimals :

a) 40cm

b) 200mm

c) 240cm

d) 3m 34cm

4) Express as km using decimals

a) 240km 120m

b) 4000m

c) 9999m

d) 4km20m

e) 22km8m

5) Find

a) 420.20+21.02

b) 41+8.881

c) 0.2+2.1+2.01

d) 0.001+2+4.2

e) 12+24.2+3.24

f) 8.06−4.06

Class VI. BPS Maths Worksheet   Page 24

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

g) $0.04-0.008$

h) $44.444-3.33$

i) $12.001-9$

j) $42-38.2$

6)   Reema bought 5.5kg of wheat and 10.75kg of sugar and 15.25kg of rice. Find the total weight of the items she purchased?

7)   Hyzam had Rs 20.He bought one pen for Rs 9.75 and one pencil for Rs 2.50.How much Rs does he have now?

8)   Ayesha bought 8m 20 cm cloth. She cut 4m 20 cm length from it for dress. How much cloth does she have now?

9)   Munna's school is at a distance of 5 km 350 m from her house. She travels 1 km 70 m on foot and the rest by bus. How much distance does she travel by bus?

10) Rahul bought 4 kg 90 kg of apples,2 kg 60 g of grapes and 5 kg 300 g of mangoes. Find the total weight of all the fruits he bought?

11)Subtract:

a)Rs 18.25 from Rs 20.75

b)202.54 m from 250 m

c)2.051 km from 5.20 km

d)0.314 kg from 2.107 kg

Answers :

1.   a)Rs6.4   b)Re 0.29   c)Re 0.04   d)Rs 25.50
   e)Rs1.50

2. a) 0.040kg   b)2.400g   c)0.005kg   d)4.312kg
   e)804.060kg

3.a)0.4cm   b)0.2cm   c)2.4cm   d)3.34cm

4. a)240.120km   b)4km c)9.999km   d)4.020km
   e)22.008km

5.a)441.22   b)49.881   c)4.31   d)6.201   e)39.44
   f)4.   g)0.032   h)41.114   i)3.001   j)3.98

6. 31.50 kg 7. Rs 17.75 8. 4m 20 cm 9. 4.280 km 10. 11.450 kg

11.a)Rs 2.5   b)47.46 m   c)3.149 km   d)1.793 kg

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Algebra

I)   <u>Fill in the blanks :</u>

1.   Letters used to represent numbers are called _____

2.   The literals whose value vary from problem to problem are called _____

3.   Numerals whose value is fixed are called _____

4.   The statement of equality which involves literals is called an _____

5.   The value of the variable which satisfies the equation is called the _to the equation.

II)   <u>Write the expression :</u>

1.   m increased by 8.

2.   b decreased by 31.

3.   Five items x increased by 5 gives 55.

4.   Half of p subtracted from the sum of a and b.

5.   Product of 7 and x divided by the difference of 7 and x.

6.   Sum of p, q and r divided by the product of a and 5.

7.   One fourth of the difference of x and y.

8.   4 subtracted from n, gives 36.

9.   z minus twice x.

10.   m taken away from 50, gives 15.

III)   <u>Identify the solution and show that other values do not satisfy</u>

1.   X+8=24 (x=3, x=15, x=16, x=0)

2.   4a=32 (a=8, a=4, a=6, a=7)

3.   y−9=29(y=20, y=38, y=37, y=39)

4. $\frac{p}{5}$ =16 (p=75, p=85, p=90, p=80)

IV)   <u>Solve :</u>

1. X+11 = 30

2. 6a=24

3. m−5=2

4. $\frac{x}{4}$ =2

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

5. $\dfrac{x}{7} = 5$

6. $\dfrac{a}{9} = 4$

7. $10n = 70$

8. $16 = y + 10$

9. $t - 14 = 0$

10. $4x = 32$

11. $17 - p = 15$

12. $23 - y = 0$

Answers :

I) 1. Variables 2. Variables 3. Constants 4. Equation 5. Solution

II)   1. $m+8$ 2. $b-31$ 3. $5x+5=55$ 4. $(a+b)-\dfrac{1}{2}p$

5. $\dfrac{7x}{7-x}$ 6. $\dfrac{p+q+r}{5a}$ 7. $\dfrac{1}{4}(x-y)$ 8. $n-4=36$

9. $z-2x$ 10. $50-m=15$

III)   1. $x=16$ 2. $a=8$ 3. $y=38$ 4. $p=80$

IV)   1. $x=19$ 2. $a=4$ 3. $m=7$ 4. $x=8$

5. $x=35$ 6. $a=36$ 7. $n=7$ 8. $y=6$

9. $t=14$ 10. $x=8$ 11. $p=2$ 12. $y=23$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Basic Geometrical Ideas

I)   Fill in the blanks :

1.   Circles having different radii but the same centre are called _____

2.   Radius is _____ of the diameter.

3.   The diameter of a circle is the _____chord of the circle.

4.   The Perimeter of a circle is called the _____.

5.   A quadrilateral has _____ diagonals.

6.   A triangle has _____elements.

7.   The interior of an angle together with the angle (boundary) itself is   called the _____

8.   In ∆PQR, the side opposite to <P is _____

9.   Length of a diameter is _____the radius of a circle.

10. All the radii of a circle are _____

II)   Choose the correct answer :

1.   The centre of a circle   [   ]

    i)   Lies in its interior   ii)lies in its exterior

    ii)   Lies on the circle   iv) none of these

2.   In quadrilateral PQRS, the two diagonal are [   ]

    i)   PQ and RS   ii) PR and RS iii) PS and PR

    ii)   PR and QS

3.   In the figure, the angle can be named as

    i) $< OPQ$ ii) $< POQ$ iii)$< PQO$ iv)$< QPO$
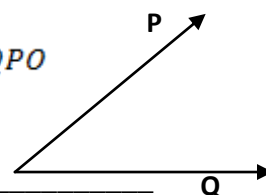
4.   A line segment joining any two points on the circle is called a _____

    (i)   radius   (ii) diameter   (iii) chord   (iv) secant

5.   A closed figure bounded by three or more segments is called a _____

        Curve   (ii) Polygon   (iii)Circle   (iv) None of these

6.   A line intersecting a circle at two different points is called a _____of a circle.

    (i) diameter   (ii) Radius   (iii) secant   (iv) centre
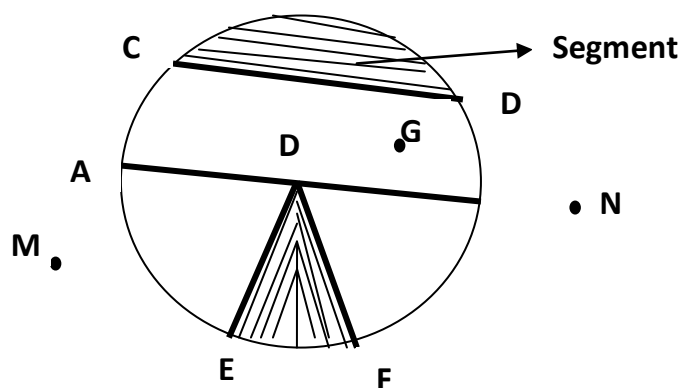
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VI – MATHS WORKSHEET

7. A closed figure formed by joining three non-collinear points is called

    (i) a triangle   (ii) an angle   (iii) a curve   (iv) none of these

8. An Angle has

    (i) One vertex and one arm

    (ii) One vertex and two arms

    (iii)Two vertex and two arms

    (iv)None of these

9. A circle is

    (i) a polygon   (ii) an open curve

    (ii) a closed curve (iv) none of these

10. A Point equidistant from all the Points on a circle is called the _____of the

    circle.

    (i) Centre   (ii) Radius   (iii) diameter   (iv)None of these

III)   (i) ΔRPQ, ΔRSP, ΔSPQ, ΔSQR   ΔSOP, ΔPOQ, ΔROQ, ΔROS

        (ii) ΔABC, ΔADE, ΔEFC, ΔDBF, ΔDEF

        (iii)ΔABD, ΔADC, $\triangle ABC$

2. a) Vertices : P, Q, R, S

   b)Pair of opposite sides : PQ, SR   PS, QR

   c)   Angles : $< P$ $< Q, < R, < S$

   d)   Pair of opposite angles : : $< P$ & $< R$, $< S$ & $< Q$

   e)   Pair of adjacent angles : PQ, QR QR, RS

   f)   Diagonals : PR, SQ

 3.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

   i)   Centre –O

   ii)   A radius – OA, OB, OE, OF

   iii) A diameter – AB

   iv)   A point in its interior – O, G

   v)   A point in its exterior – M,N

   vi)   A chord – CD

   vii) An arc - $\overline{EFO}$

   viii) A segment

   ix)   A sector

   x)   A point on the circle : A, B, D, F

4 .

Interior of a quadrilateral
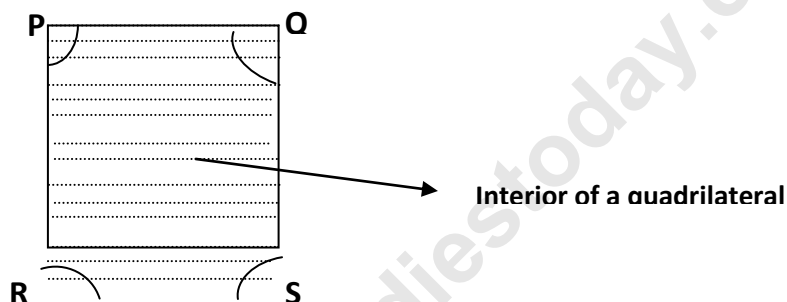
5.(i) U, M, r

  (ii)p, q

  (iii) A, B, C, t

 6. (i) 8 Angles : $< ABC,\ < BCA, < CAB, <ADC, < ACD, < CAD, < BAD, < BCD$

(ii) 3 Angles : $< QPR, < PRQ, < PQR$

(iii) 4 Angles : $< DAB, < ABC, < BCD, < CDA$

7) (i) $< 1 = < ADC \quad < 2 = < AOD \quad < 3 = < DOB \quad\quad < 4 = < BOC$

   (ii) $< 1 = < DAB \quad < 2 = < ABD \quad < 3 = < CBD \quad\quad < 4 = < BCD$

$< 5 = < CDB \quad\quad < 6 = < ADB$

(iii) $< 1 = < ABC, < 2 = BCD$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Perimeter And Area

I) Fill in the blanks :

1. _____ is the distance around the figure.

2. Perimeter of a square _____.

3. Perimeter ÷ 4 = a _____ of a square.

4. Perimeter of a regular pentagon is 125cm. What is the length of the side?

5. Length of the rectangle = _____ ÷ breadth.

II) Do as directed :

1. Find the perimeter of the following :

   a. Rectangle whose l=5cm and b=4cm.

   b. Square whose side = 15cm

   c. A regular hexagon, side =7.2cm

   d. Equilateral triangle , side =5cm

2. Find the side of the square whose perimeter is

   a)22cm   b)16cm.

3. Shika runs around a square of side 75m. Priya runs around a rectangle   with length 60m and breadth 45m. Who covers the small distance ?

4. The length of a rectangular field is 100m. If its perimeter is 300m. What is its breadth?

5. Find the cost of fencing a rectangular park of length 175m and breadth 125cm at the rate of Rs 12/cm.

6. The area of a rectangle is 240sq.cm. If its length is 20cm. Find its breadth.

7. A marble tile measures 25cm by 20cm. How many tiles will be required to cover a wall of size 4cm by 3cm ?

8. Find the perimeter of a rectangle whose area is 650 sq.cm and its breadth is 13cm.

9. The side of a square is 70cm. Find its area and perimeter.

Ans :

I) 1. Perimeter   2. 4 x length of a side   3. a length of a side   4. 25cm   5. Area.

II) 1. a) 18cm   b)60cm   c)36cm   d)15cm   2. a) 5.5cm   b)4cm   3 Priya covers the small distance.4. 50cm   5. Rs 7200   6. 12cm 7)240 tiles.   8. 126cm

9. Area : 4900sq.cm   perimeter = 280cm

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Negative Numbers and Integers

1.   Draw a number line and represent the integers   O, 2, +4, -3, -5 and 6

2.   Write the absolute values of the following integers. 17, -8, 0, -16, 25 and -11

3.   Write the additive inverse of the following integers. -17,   25,   -101, 249,   -2167 and 3190

4.   Put > or < sign in the boxes.

i)   (-7) + 12 - (-2)   ☐   (-6) -11 + (-3)

ii)   5 – (-16) + (-4)   ☐   (-2) – (-7) + 6

iii)   (-15) – (-7) + 13   ☐   4 + (-12) – (-3)

iv)   7 – 5 + (-21) ☐ 6 – 18 + (-5)

5.   What should be added to the sum of (-26) and 31 to make it equal to the sum of (-35) and (-11)?

6.   Which is greater? The sum of 72 and (-42) or the sum of (-65) and 96.
      By how much?

7.   Subtract the sum of 32 and (-11) from the sum of 49 and (-53)

8.   Evaluate :

i) (-40) + (-21) + (-16)	vi) (-66) + (-22) +45 – (-33)
ii) 72 + (-16) + 40 + (-22)	vii) 3000 + (-1000) - (-2000)
iii) 63 + (-24) + (-23)	viii) 28 + (-50) - (-41) + (-100)
iv) 53 + (-42) – (-29) + (-11)	ix) (-1001) – (-450) + (-750)
v) (-100) + 47 + (-29) + 16	x) (-16) + (-12) - (-21) + (-30) + 40

9.   Write the next four integers of the following progressions:

+5, +8, +11, ____, ____, ____, ____.

-5, -9, -13, ____, ____, ____, ____.

-15, -25, -35, ____, ____, ____, ____.

-6, -3, 0, ____, ____, ____, ____.

-12, -5, 2, ____, ____, ____, ____.

10.   Write the following integers in ascending order:

i)   -8, 11, 14, 0, -7, -3, -1   ii) 15, -12, -6, -5, 8, 2, 0

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Ratio, Proportion And Unitary Method

1.   Write the ratios in the simplest form:

i)	15 minutes to one hour	viii)	2cm to 4 cm	xv)	750g to 3kg
ii)	600g to 1 kg	ix)	4 days to 2 weeks	xvi)	8days to 6 weeks
iii)	50p to Rs. 2.50	x)	3 yrs. To 6 months	xvii)	450ml to 3l
iv)	2l to 800 ml	xi)	45 sec to 3 min	xviii)	8mm to 1cm
v)	80cm to 4 m	xii)	45cm to 3m	xix)	Rs. 1.50 to 25p
vi)	3 km to 600m	xiii)	30 min to 4 hours	xx)	4 months to 4yrs
vii)	3 dozen to 3 scores	xiv)	Rs. 1500 to Rs. 18000	xxi)	294 : 343

2.   Divide Rs. 1450 between A and B in the ratio 2 : 3

3.   Dr. Suma earns Rs. 50,000 p.m. she spends Rs. 42,000 of it and saves the rest.

Find the ratio of

i)   Her expenditure to her income

ii)   Her saving to her income

iii)   Her expenditure to her savings

4.   Fill in :

i)	3:5 = ____ : 15	v)	6:7 = ____:49	ix)	5:30 = ____:6
ii)	6: ____ = 12:30	vi)	____:5 = 20:25	x)	7: ____ = 49:63
iii)	____:11 = 12:22	vii)	3: ____ = 5:10	xi)	1:11 = 9: ____
iv)	9:13 = 27: ____	viii)	45:15 = 3 : ____	xii)	____:13 = 18:117

5.   Meena got Rs. 600 as her share from Rs. 2000. Tina got Rs. 750 as her share from Rs. 3000.

Express their shares as ratios in the lower terms. Compare and find who got more.

6.   Fill in the blanks with >, = or <

i)   7:10 ____ 5:10   ii)   6:7 ____ 6:11   iii)   4: 5 ____ 8:10

iv)   9:13 ____ 9:15   V)   11:20 ____ 9:20   VI)   4:9 ____ 12:27

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

7.   The ratio of the length of a rectangle to its breadth is 3:2. If the perimeter of the rectangle

is 20 cm find the length, breadth and area.

8.   Fill in :

i)   2:4 :: ____:10   ii)   ____:8 :: 1:4   iii)   3:8 :: 15: ____

iv)   1: ____ :: 3:15   v)   9: ____ :: 90:100

9.   The cost of 4 pens is Rs. 40. The cost of 11 pens is Rs. _____.

10.   The weight of 15 boxes is 60 kg. The weight of 12 boxes is _____.

11.   Maya can walk 6km in 2 hours. In 3 hours she can walk _____.

12.   Dinner at Marhaba costs SR 1050 for 10 people. How many people can have dinner for SR 1995?

13.   A car travels 95 km in 5 litres of petrol. How far can it go in 11 litres of petrol?

Elementary Shapes

1.   Given below are the lengths of the sides of triangles.
    Classify them as equilateral, isosceles or scalene

i)   6cm, 2.4cm, 6cm   ii)   7cm, 9cm, 5.5cm   iii)   5.4cm, 7cm, 6.1cm

iv)   7.2cm, 7.2cm, 7.2cm   v)   10.1cm, 8.6cm, 8.6cm   vi)   3.5cm, 4.5cm, 5.1cm

vii)   4.8cm, 4.8cm, 4.8cm   viii)   6.8cm 6.8cm, 8.6cm   ix)   3cm, 4cm, 5cm

2.   Draw a triangle ABC using a protactor, measure $\angle$A, $\angle$B and $\angle$C.
    Find their sum. What do you notice. Also measure the sides AB, BC, AC.
    What kind of a triangle is this?

3.   Given below are the measures of the angles of some triangles. Classify them
    As acute-angled, obtuse-angled or right-angled.

i) 60^0, 90^0, 30^0 ii) 40^0, 100^0, 40^0 iii) 60^0, 60^0, 60^0

iv) 20^0, 40^0, 120^0 v) 50^0, 60^0, 70^0 vi) 45^0, 45^0, 90^0

4.   Draw a triangle ABC. Measure the sides AB, BC, AC
    Verify i) AB + BC > AC   ii) BC + AC > AB   iii) AB + AC > BC

Class VI. BPS Maths Worksheet   Page 34

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

5.   Write the number of sides of the following Polygons: Triangles, Pentagon, Quadrilateral, Heptagon, Hexagon, Nonagon, Octogon, Decagon.

6.   Fill in:

Name of the Solid	Number of		
	Faces	Edges	Vertices
Cube			
Cuboid			
Square Pyramid			
Triangular Pyramid			
Triangular Prism			

7.   Write yes of No

Quadrilateral	Opposite Sides Parallel Equal		All Sides Equal	Opposite Angles Equal	All Angles Equal	Diagonals		
						Equal	Perpendicular	Bisect each
Trapezium								
Parallelogram								
Rhombus								
Rectangle								
Square								

8.   Name each of the following 3 – D shapes. Write number of Curved Surfaces and no of

flat faces.
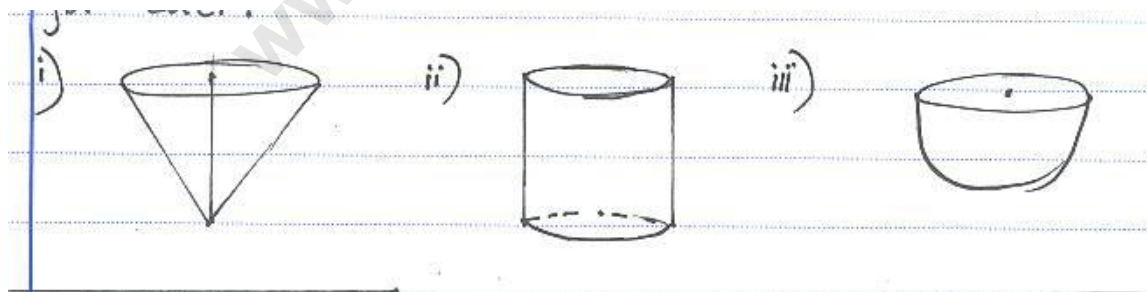
Symmetry

1.   Look around and list any five things from your surroundings that are symmetrical

2.   Write any 3 English alphabet, which are symmetrical and have

i)   One axis of symmetry

ii)   Two axes of symmetry

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

iii)   More than two axes of symmetry

3.   Draw an angle of any measure. Using a ruler and protractor draw the line of symmetry (angle bisector).

4.   Write the no. of axes of Symmetry of

i)   Square

ii)   Rectangle

iii)   Circle

iv)   Scalene Triangle

v)   Equilateral Triangle

vi)   Rhombus

Geometrical Constructions

1.   Construct the following angles using a ruler and compasses

   i) 60^0 ii) 120^0 iii) 30^0 iv) 90^0 v) 45^0

2.   Draw an angle of measure 100^0 using protractor. Draw an angle equal to to this angle without using protractor. Draw the bisector of this angle.

3.   Draw a circle of radius 4cm. Inscribe a regular hexagon in it.

4.   Draw a line-segment AB of any length. Draw the perpendicular bisector of it.

5.   Draw a line 'l'. Take a point P outside the line 'l'. Draw a perpendicular line to 'l' from P.

Perimeter And Area

1.   Which has greater perimeter? - a regular pentagon of 10 cm side or a rectangle with side 17 cm and 12 cm.

2.   A wire bent in the shape of a rectangle of sides 13.5 cm by 6.5 cm was straightened and   re-bent into a square. Find the length of the side of the square.

3.   The cost of fencing a square field was Rs. 1380 @Rs. 15/m Find the side of the square field   And hence find its area.

4.   A wire was bent to make a square of side 10.5 cm The same wire is re-bent to make a regular hexagon. Find the length of side of the hexagon.

5.   Area of a rectangle is 24 cm^2. If its length is 6cm find its width. Find the area of a Square whose perimeter is same as of this rectangle.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Whole Numbers

Fill in the blanks :

1. $25 \times 8 \times 125 \times 4 = $ _____

2. $315 \times 105 = 315 \times 100 + $ _____ $\times 5$

3. Division by zero is _____

4. The whole number _____ has no number .

5. The smallest natural number is _____.

6. The sum of 3 odd numbers is _____.

7. _____ is the additive identity for the whole numbers.

8. $(7 \times 8) \times 5 = 7 \times (8 \times 5)$ This statement shows that multiplication of whole numbers is _____.

9. How many numbers between 102 and 211.

10. $3 + 7 = 7 + 3$. This statement shows that addition of whole numbers is _____.

11. Determining the product by suitable rearrangements

    a) $2 \times 125 \times 50 \times 8$

    b) $16 \times 279 \times 625$

    c) $2 \times 1735 \times 50$

12. Using distribution property, find each of the following products.

    a) 213×104

    b) 256×1007

    c) 462×38

13. Find the value :

    a) $361 + 1482 + 639 + 518$

    b) $409 + 386 + 3591 + 614$

    c) $786 \times 97 + 786 \times 3$

    d) $14 + 438 + 486 + 62$

    e) $1252 \times 112 - 1252 \times 12$

    f) $716 \times 6 + 716 \times 4$

    g) $8062 \times 169 - 8062 \times 69$

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

14. A teacher purchases 42 Mathematics books and 42 English books for his class. If the cost of a Mathematics book is Rs 52 and the cost of an English book is Rs48. Find the total amount paid by the teacher to the shopkeeper.

15. If the cost of a pack of mango drink is Rs.14. Then how many packs of the drink can be purchased for Rs.76 and what is the balance ?

Knowing Our Numbers

1. Estimate using general rule :

   (i) $830 + 976$ (ii) $496 - 215$ (iii) $13,804 + 3,777$ (iv) $61,292 - 21,496$

2. Estimate the products using general rule :

   (i) 758×151 (ii) 4391×2300 (iii) 2187×456 (iv) 6978×43

3. Write the Roman Numeral for :

   (i) 99   (ii) 48   (iii) 67   (iv) 81   (v) 17   (vi) 76   (viii) 54

4. Answer the following :

   1. The town newspaper is published every day. One copy has 15 pages. Everyday 12, 500 copies are printed. How man total pages are printed every day?

   2. Apples are packed in boxes, each weighing 5kg 500gm. How many such boxes can be loaded in a van which cannot carry beyond 1000kg?

   Whole Numbers

Answer :   1)100000   2)315   3) not defined   4) zero   5) one   6) odd   7) zero
8) associate   9) 108   10) commutative
11)a) 100000   b) 2790000   c) 173500
   14) 24200   15) 5, Balance   Rs.6

   Knowing our numbers

   Answers : I) (i) 1,800   (ii) 300   (iii) 18,000   (iv) 40,000

   II) (i) 16,0000   (ii) 80,00,000   (iii) 10,00,000 (iv) 2,80,000

   III) (i) XCIX   (ii) XLVIII   (iii) LXVII   (iv) LXXXI (v) XVII   (vi) LXXXI

            (v) XVII   (vi) LXXVI   (vii) XCIII   (viii) LIV

   IV) (1) 1,87,500 pages   (2) 181 boxes

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Understanding Elementary Shapes

I)   Fill in the blanks :

1. An angle whose measure is greater than that of a right angle is _____

2. Three edges meet at a point called a _____.

3. A _____ is larger than a straight angles.

4. A Polygon with 5 sides is called a _____.

5. A triangle having all three unequal sides is called a _____.

II)   Write down the measure of

 a) Some acute angles.

 b) Some obtuse angles.

 c) What is the measure of a straight angle?

III)   What shape is

 a) A brick.

 b) A match box

 c) A sweet laddu

 d) A ball

 e) A die

 f) A road roller

IV)   Name the types of following triangles :

1. $\triangle LMN$ with $m < L = 80^0$, $m < M = 70^0$, $m < M = 30^0$.

2. $\triangle ABC$ with $m < A = 90^0$.

3. $\triangle PQR$ such that $PQ = QR = PR = 8cm$

4. $\triangle XYZ$ with $AB = 8cm$ $BC = 5cm$ $CA = 5cm$

5. Triangle with lengths of sides 7cm, 8cm and 9cm.

6. $\triangle PQR$ with $m < Q = 90^0$ and PQ=QR.

V)   Let $\overline{PQ}$ be the perpendicular to the line segment $\overline{XY}$. Let $\overline{PQ}$ and $\overline{XY}$ intersect in

the point A. What is the measure of $< PAY$?

Class VI. BPS Maths Worksheet

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

VI)   Classify each one of the following angles as right ,straight , acute , obtuse or reflex.

a)   b)   c)

d)   e)

d)
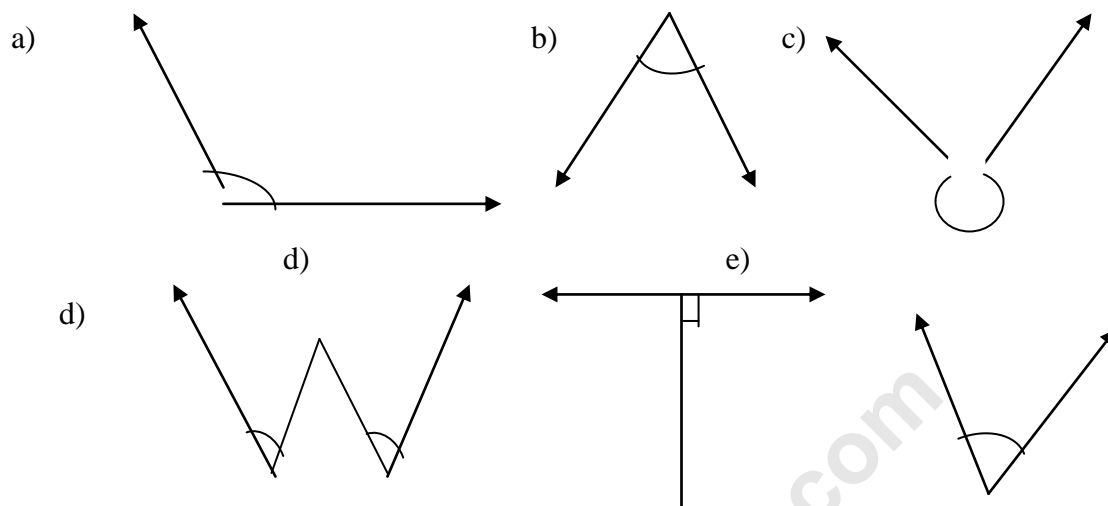
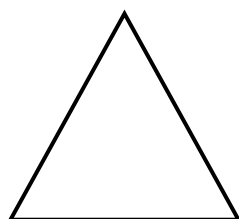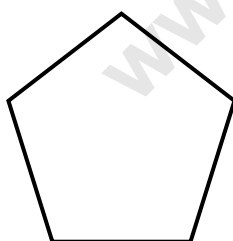VII)   Find the angle measure between the hands of the clock in each figure
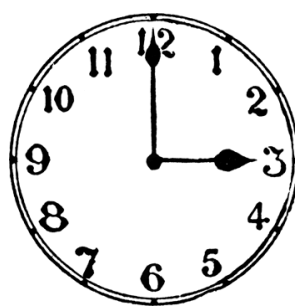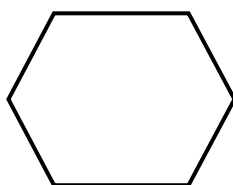
a)   b)   c)

VIII)   Name each polygon
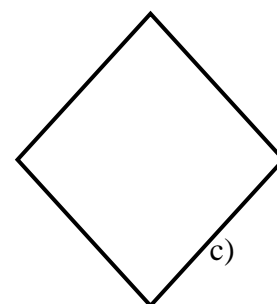
c)
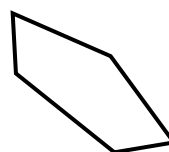
d)   e)

IX)   1. A cuboid has _____ faces.

2. Each face has _____ edges.

3. Each face has _____ vertices.

Class VI. BPS Maths Worksheet   Page 40

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Answers :

   I)   1. Obtuse angle   2. Vertex   3. Reflex angle

          4. Pentagon   5. Scalene triangle   6. 90^0

III) a) cuboid   b) cuboid   c) sphere   d) sphere   e) cube   f) cylinder

IV) 1. Acute angled triangle   2. Right angles triangle

     3. Equilateral triangle.   4. Isosceles triangle.

     5. Scalene triangle   6. Isosceles right angled triangle

VI) a) obtuse angle   b) Acute angle   c) Reflex   d) Acute

     e)   Right   f) Acute

VII) a) Right angle 90^0 b) Acute   c) Straight angle 180^0

VIII) a) Pentagon b) triangle c) Quadrilateral d)octagon e) Pentagon

IX 1. 6 faces   2. 4 edges 3. 4 edges

Class VI. BPS Maths Worksheet

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Playing With Numbers]

Fill in the blanks:

1. _____ is a factor of every number.

2. The factor of a prime number is _____ and _____.

3. A number which has more than two factor is called _____.

4. The smallest perfect number is _____.

5. If a number ends with 0, it is divisible by _____.

6. The sum of all the factors of a perfect number is equal to _____ the number.

7. _____ is neither prime nor composite.

8. A number is divisible by 6, if it is divisible by both _____ and _____.

9. The smallest even numbers is _____ and the smallest odd numbers is a _____.

10. Sum of any two even numbers is _____.

11. Sum of two odd numbers is _____.

12. The only one even prime is _____.

13. The greatest two digit prime number is _____.

14. The smallest two digit prime numbers is _____.

15. The difference between two twin prime is _____.

16. A prime number has only _____ factors.

17 . _____ is the unique number.

18. The smallest digit in the blank space of _____9853. So that the number so formed is divisible by 3.

19. The L.C.M of two numbers in which one is a factor of the other is _____.

20. The L.C.M of two co-prime numbers _____.

21. The smallest factor of 856 is _____.

22. The smallest multiple of 856 is _____.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

23. The greatest factor of 856 is _____.

24. The perfect numbers below 100 are _____ and _____.

25. The smallest prime number is _____.

26. The smallest composite number is _____.

27. The smallest number having three different prime factors is _____.

28. The sum of any two consecutive odd numbers is always divisible by _____.

29. The product of three consecutive numbers is divisible by _____.

Do the following :

1. Express the smallest 5 – digit number in the form of prime factor.

2. Determine if 9130 is divisible by 110.

3. Using divisibility test check whether the following are divisible by
    2, 3, 4, 5, 6, 8, 9, 10 and 11
    (a)   91800   (b) 31956   (c) 81615   (d) 61042   (e)48400

    (f)   99909

4. Write all the twin primes below 100.

5. Write all the prime numbers below 70.

6. Find the smallest number when divided by 28, 40 and 44 leave a remainder 8 in each case.

7. Write two prime numbers whose sum is 100.

8. Write three pairs of prime numbers whose sum is an odd number.

9. Find the smallest four digit number which is exactly divisible by 12, 16, 24 and 36.

10. Write all the composite numbers between 30 and 50.

11. The length , breadth and height of a room are 8m25cm, 6m75cm and 4m50cm respectively. Determine the longest tape which can measure the three dimension of the room exactly.

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

12. Telegraph pole occurs at equal distances of 220m along a road and heaps of stones are put at equal distances of 300m along the same road. The first heap is at the foot of the first pole. How far from it along the road is the next heap which lies at the foot of a pole.

Answers :

1) 1   2) 1 and number itself   3) composite   4) 6   5) 10, 2 and 5

6) twice   7) 1   8) 2 & 3   9) 2, 1   10) even   11)even   12) 2

13) 97   14)11   15) 2   16) two   17) 1   18) 2

19) the greater number   20) their product   21) 856   22) 856

23) 6 and 28   24) 2   25) 4   26) 30   27) 4

28) 6

Do the following

1. $2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5 \times 5$

2. Hint : Check the divisibility of 11 and 10.

4. (3, 5), (5,7) , (11,13) , (17, 19) , (29,31), (41, 43) …………….

5. 2, 3, 5, 7 , 11 , 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

6.   Hint : Find the LCM add 8.

7. 97 + 3 = 100, 89 + 11 = 100
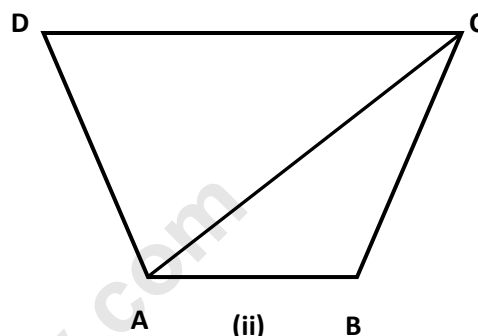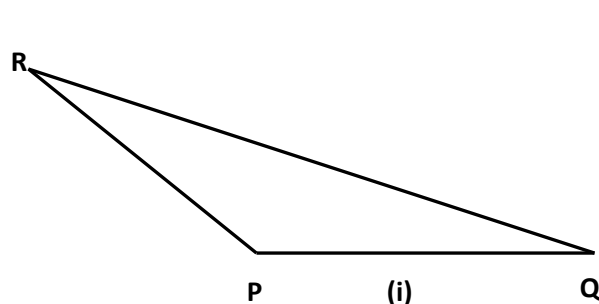
8. (2,7), (2,11), (2,13)…………….

9. 864

11. 75cm

12. 3300
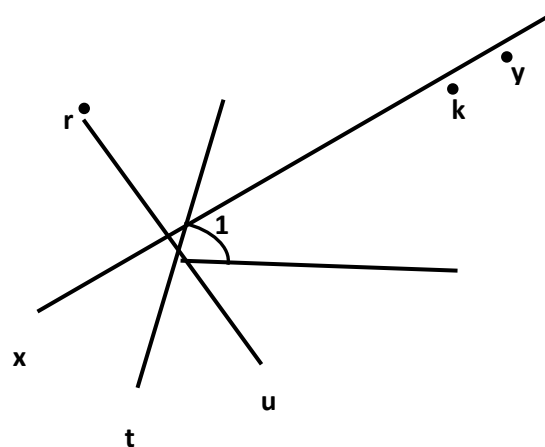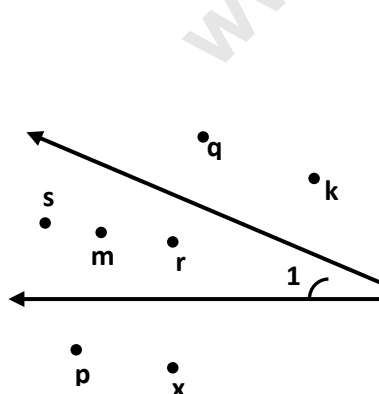
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VI – MATHS WORKSHEET

Basic Geometrical Ideas]

I) (a) Name all the different angles shown in the figures :

(b) Count the number of angles.

(c) List the acute angles

(d) List the obtuse angles

(e) Identify the right angles and straight angles.
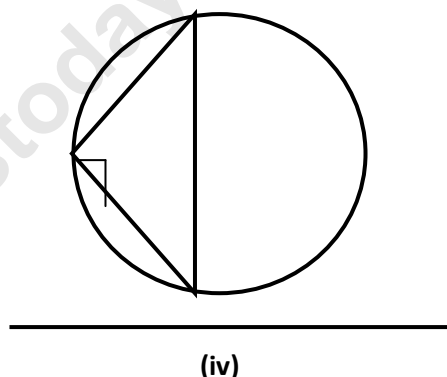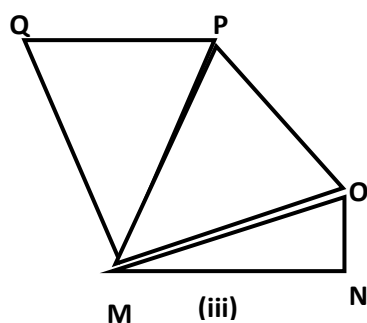
2) List all the points which are in the exterior and interior of the given angle < 1

3. Draw a rough sketch of a quadrilateral PQRS state

a) two pairs of opposite sides.

b) two pairs of opposite angles.

Class VI. BPS Maths Worksheet   Page 45

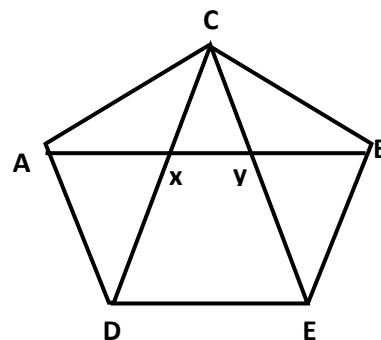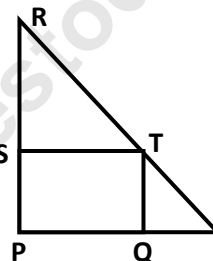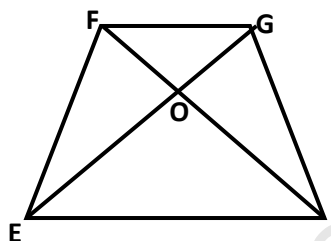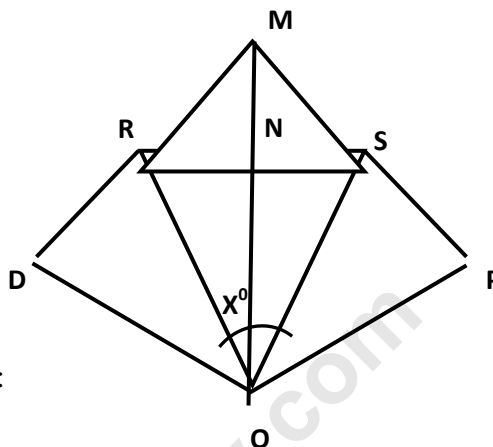# BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

c) four pairs of adjacent angles

d) four pairs of adjacent sides.

e) Draw the diagonals and name them.

4) Name the interior and exterior points of the angle marked x^0 in the following:
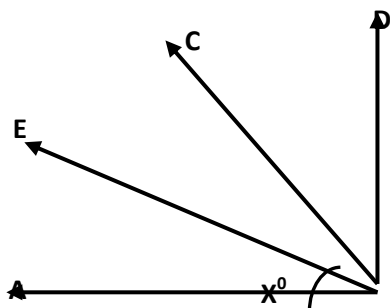
5) a) Identify the triangles in the figure :

b) Write the names of angles

c) Write the names of line segments.

6) Draw any circle and mark

(a) its centre

(b) three radii

(c) a diameter

(d) shade a minor sector

(e) colour a minor arc

(f) a chord

(g) two points in its interior

(h) two points in its exterior

(j) three points on the circle

Class VI. BPS Maths Worksheet   Page 46

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Integers

I   Fill in the blanks:

1.   -5 + (-11) = _____

2.   8 + (-6) = _____

3.   (-26) + (-37) = _____

4.   Write the greatest negative integer _____

5.   Write all integers between - 30 and -20 _____

6.   Find the sum of - 45 and 30

7.   Which is greater : -65 or -56 ?

8.   Which integer is neither positive nor negative ?

II.   Draw a number line and answer the following :

1.   Which number will we reach if we move 4 numbers to the
         right of -2 ?

2.   If we are at -6 on the number line, in which direction should we move to reach -1 ?

3.   Using the number line write the integer

        a) 4 less than -1   2) 6 more than -6

4.   Use number line and add the following integers :

a)   (-1) + (-8)   b)   (-1) + (-2) + (-4)   c) -8 - (-10)

5.   Fill in the blanks with >, < or =

a)   54 - (-11) _____ 57 + (-4)

b)   (-35) - (-52) _____ (-52) - (-35)

6.   Find :

i)   60 - (-20) - (+10)   ii) (-15) + 12 - 9 +1

Class VI. BPS Maths Worksheet   Page 47

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

Fractions

1. What fraction of an hour is 30 minutes ?

2. Write the natural numbers from 5 to 15. What fraction of them are prime numbers?

3. Express as mixed fractions.   a) $\dfrac{30}{7}$ b) $\dfrac{51}{9}$

4. Express as improper fractions. a) $7\dfrac{3}{9}$ b) $11\dfrac{1}{13}$

5. Find as equivalent fraction of $\dfrac{56}{72}$ with denominator 18.

6. Simplify

i) $\dfrac{21}{35}$ ii) $\dfrac{34}{85}$ iii) $\dfrac{75}{120}$ iv) $\dfrac{66}{75}$ v) $\dfrac{112}{128}$ vi) $\dfrac{48}{57}$

7. Add

a) $\dfrac{5}{12}$ and $\dfrac{19}{24}$ b) $\dfrac{3}{8}$, $\dfrac{1}{2}$, and $\dfrac{5}{6}$ c) $2\dfrac{5}{6}$ and $8\dfrac{1}{4}$

8. The weight of two boxes together is $5\dfrac{3}{4}$ kg. If one box weighs $2\dfrac{5}{6}$ kg,

Find the weight of the other.

Mensuration

1. The length and breadth of a Rectangle are 11 cm and 9 cm. Find its area and Perimeter.

2. The area of a Rectangle is 144 sq cm and its length is 16 cm. Find   the breadth of the Rectangle?

3. Find the perimeter of a regular hexagon of side x cm.

4. If the perimeter of a regular pentagon is 65 cm. Find its side ?

5. The perimeter of a triangle is 42 cm. If two of its sides are 16 cm and 12 cm. Find its third side?

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

6. A piece of string is 45 cm long. It is bent to form an equilateral triangle. Find the side of triangle.

7. An athlete takes 5 rounds of a rectangular park 120 m long and 80m wide. Find the total distance covered by him.

8. Find the area of a square whose perimeter is 260 cm.

9. The total cost of fencing a square park at Rs. 20 per metre is Rs. 2880. Find the side of the square park.

10. The floor of a room with dimensions 5 m and 3m is to be covered with square tiles. If each square tile is of side 25 cm. Find the number of tiles required.

Class VI. BPS Maths Worksheet   Page 49

BRILLIANT PUBLIC SCHOOL, SITAMARHI
# VI – MATHS WORKSHEET

Practical Geometry

1. Draw a circle of radius 5.6cm

2. With the same centre O, draw two circles of radii 5cm and 2.5cm

3. Draw any circle and mark points P, Q and R such that

   a) P is on the circle

   b) Q is in the interior of the circle.

   c) R is in the exterior of the circle.

4. Draw any line segment $\overline{PQ}$. Mark any point B on it. Through B, draw a perpendicular to $\overline{PQ}$.

5. Draw $\overline{XY}$ of length 8.3cm and find its axis of symmetry.

6. Draw a line segment of length 10.5cm and construct its perpendicular bisector.

7. With $\overline{AB}$ of length 6.2cm as diameter, draw a circle.

8. Draw a circle of radius 4.5cm. Draw any two of its chords. Construct the perpendicular bisectors of these chords. Where do they meet.

9. Draw a line segment of length 10.8cm. Using compasses, divide it into four equal parts . Verify by actual measurement.

10. Draw the perpendicular bisector of $\overline{AB}$ whose length is 8.3cm

    a) Take any point P on the bisector drawn. Examine whether PA = PB

    b) If M is the mid point of $\overline{AB}$, what can you say about the length of MA and MB?

11. Draw an angle of measure 137^0 and construct its bisector.

12. Draw a right angle and construct its bisector.

13. Draw an angle of measure 152^0 and divide into four equal parts

14. Draw an angle of measure 60^0 and bisect it.

15. Draw an angle of measure 150^0 and bisect it.

16. Construct with ruler and compasses, angles of following measures.

    a) 60^0

    b) 120^0

    c) 90^0

    d) 45^0

    e) 15^0

    f) 30^0

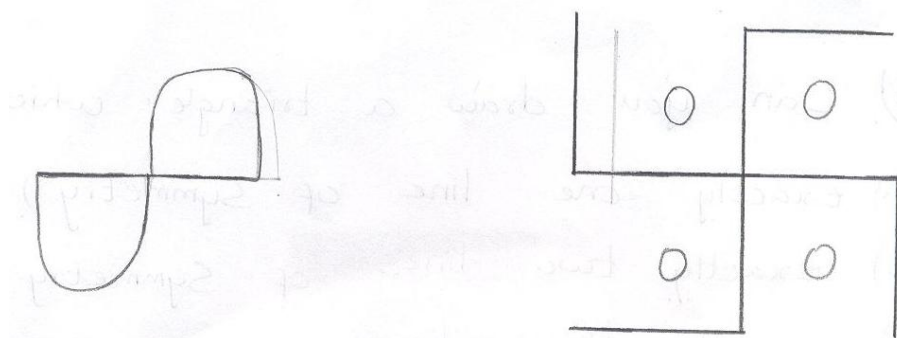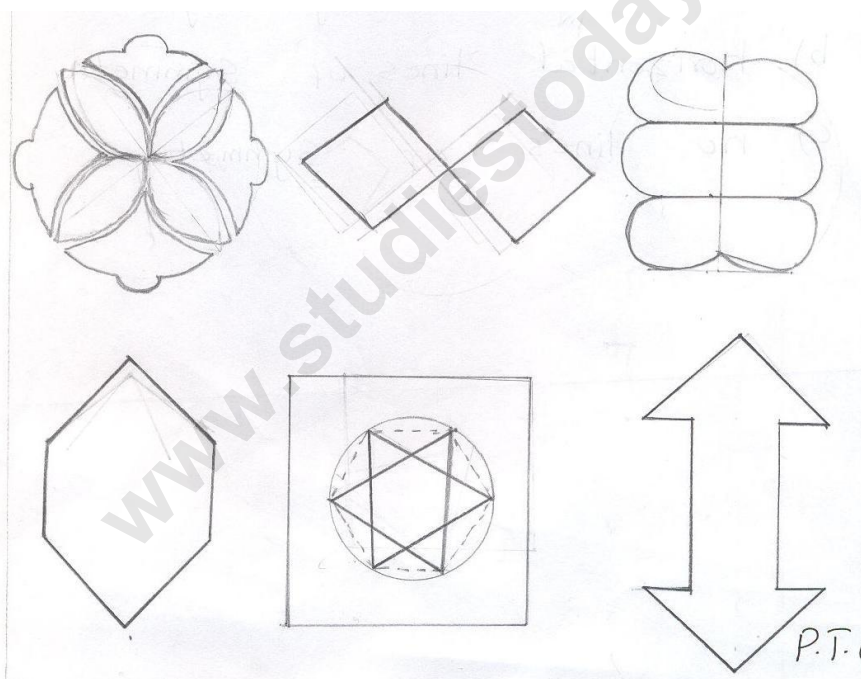# BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

17. Draw a circle and any two of its diameter. What is the figure obtained ? What figure is obtained if the diameter are perpendicular to each other ?
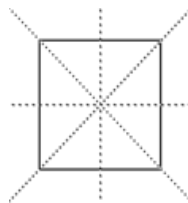
1) Can you draw a triangle which has

    a) exactly one line of symmetry

    b) exactly two lines of symmetry ?

    c) exactly three lines of symmetry ?

    d) no lines of symmetry ?

2) Find the number of lines of symmetry in each of the following shapes ?

BRILLIANT PUBLIC SCHOOL, SITAMARHI
VI – MATHS WORKSHEET

3) Consider the letters of English alphabets, A to Z.

List among them the letters which have

a)   Vertical lines of symmetry

b)   Horizontal lines of symmetry

c)   No lines of symmetry

4) Complete the following table :

Sl#	Shape	Rough Figure	Number of lines of symmetry
1.	Equilateral triangle		
2.	Square		
3.	Rectangle		
4.	Isosceles Triangle		
5.	Rhombus		
6.	Circles		
7.	Parallelogram		
8.	Scalene Triangle		

5) Write some application of symmetry in everyday life.

Class VI. BPS Maths Worksheet   Page 52