

PVG's  
**Muktangan English School & Jr. College, Pune - 9**  
**Summative Written Test - I (2024-25 )**  
**Standard - VII**

**Subject - Mathematics**  
**Date - 18.10.2024**

**Marks - 50**  
**Time - 8.00 am to 10.00 am**

**Q. 1A) Fill in the blanks by selecting correct alternative and rewrite the statements. [5]**

1) The three angle bisectors of a triangle are concurrent. Their point of concurrence is called the \_\_\_\_\_ .

(circumcentre, apex, incentre)

2) If the difference between two co-prime numbers is 2, the numbers are said to be \_\_\_\_\_ prime numbers.

(twin, composite, even)

3)  $-12 \times 9 =$  \_\_\_\_\_

(108, -108, 180)

4) \_\_\_\_\_ is the HCF of any two consecutive even numbers.

(2, 3, 4)

5)  $\left[ \left( \frac{3}{7} \right)^{-3} \right]^4 =$  \_\_\_\_\_

$\left[ \left( \frac{3}{7} \right)^{-7}, \left( \frac{3}{7} \right)^{-12}, \left( \frac{3}{7} \right)^{12} \right]$

**B) State whether the following statements are true or false and rewrite them. [5]**

1) In right angled triangle, the side opposite to the right angle is called hypotenuse.

2) If given line segments are equal in length, they are congruent.

3) There are innumerable rational numbers between any two rational numbers.

4) The second power of any number is the number itself.

5) In a joint bar graph, the width of all columns should be equal.

**Q.2 Attempt any six of the following questions.****[12]**

- 1) If  $m\angle A = 50^\circ$ , What is the measure of the complement of  $\angle A$ ?
- 2) Write all the prime numbers between 21 to 40.
- 3) Write the decimal form of rational number  $\frac{9}{4}$
- 4) Find the square root of 625 by completing the following activity -

Solution : The factors of 625 are

$$\begin{aligned}
 625 &= 5 \times \boxed{\phantom{00}} \\
 &= 5 \times 5 \times 25 \\
 &= 5 \times 5 \times \boxed{\phantom{00}} \times 5
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{The square root of } 625 &= \boxed{\phantom{00}} \times 5 \\
 &= \boxed{\phantom{00}}
 \end{aligned}$$

- 5) Find value of the following. (using law of indices)
  - a)  $6^0$
  - b)  $3^{-2}$
- 6) Construct a triangle DMAN,  $m\angle MAN = 90^\circ$ ,  $l(MN) = 10$  cm,  $l(AN) = 8$  cm.
- 7) Solve -  $\frac{3}{11} \times \frac{5}{9}$

**Q.3 Attempt any five of the following questions.****[15]**

- 1) Subtract the following rational numbers by filling in the boxes given below. -

$$\frac{8}{11} - \frac{5}{9}$$

Solution :  $\frac{8}{11} - \frac{5}{9}$

Equalising the denominators,

$$= \frac{8 \times \boxed{\phantom{00}}}{11 \times 9} - \frac{5 \times \boxed{\phantom{00}}}{9 \times 11}$$

$$= \frac{\boxed{\phantom{00}}}{99} - \frac{\boxed{\phantom{00}}}{99}$$

$$= \frac{\boxed{\phantom{00}} - \boxed{\phantom{00}}}{99}$$

Ans. =  $\boxed{\phantom{00}}$

2) Reduce the fraction to the simplest form -

$$\frac{493}{374}$$

3) Find the measure of the supplement of an angle of  $115^\circ$  by filling in the boxes given below.

Solution :

Let the measure of the supplementary angle be  $p^\circ$ .

The sum of the measures of two supplementary angles is

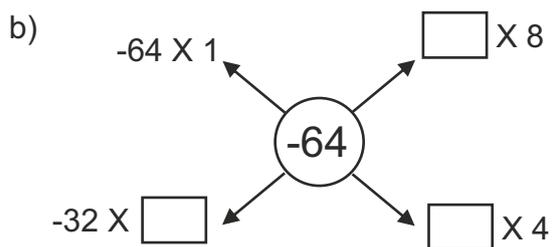
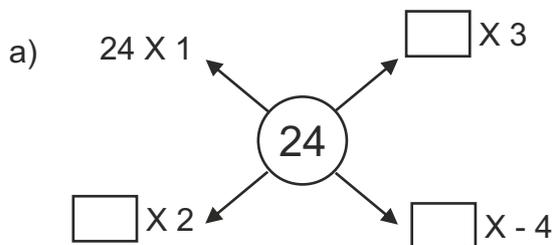
$$\backslash 115^\circ + p^\circ = \text{$$

$$\backslash p^\circ = \text{} - \text{$$

$$\backslash p^\circ = \text{$$

\ The measure of supplement of an angle of  $115^\circ$  is

4) Complete the following activity -



5) Find the LCM of 36, 42

6) Simplify - (using law of indices)

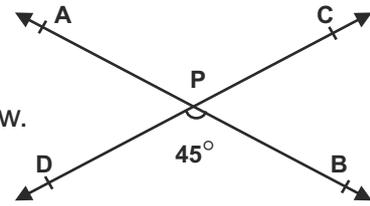
a)  $7^4 \times 7^2$

b)  $a^6, a^4$

**Q. 4 Attempt any two of the following questions.**

**[ 8 ]**

- 1) In the adjoining figure,  
 Lines AB and CD intersect at point P.  
 If  $m\angle DPB = 45^\circ$ , find the measures of  $\angle APC$ ,  
 $m\angle APD$ ,  $\angle CPB$  by filling up the boxes given below.



Solution -  
 In the given figure,

$$\angle APD + \angle DPB = \boxed{\phantom{000}} \text{ ..... Angles in linear pair}$$

$$\therefore \angle APD + \boxed{\phantom{000}} = 180^\circ$$

$$\therefore \angle APD = 180^\circ - \boxed{\phantom{000}}$$

$$\therefore m\angle APD = \boxed{\phantom{000}}$$

$$\text{Now, } \angle DPB = \angle APC = \boxed{\phantom{000}} \text{ .....Vertically opposite angles}$$

$$\text{And, } \angle APD = \angle CPB = \boxed{\phantom{000}}$$

$$\text{Ans. : } m\angle APC = 45^\circ$$

$$m\angle APD = \boxed{\phantom{000}}$$

$$m\angle CPB = \boxed{\phantom{000}}$$

- 2) Simplify -

$$2 \times \{25 \times [(113 - 9) + (4 \times 2 \times 13)]\}$$

Solution -

$$= 2 \times \{25 \times [(\boxed{\phantom{000}}) + (4 \times 2 \times 13)]\}$$

$$= 2 \times \{25 \times [\boxed{\phantom{000}} + (\boxed{\phantom{000}} \times 13)]\}$$

$$= 2 \times \{25 \times [\boxed{\phantom{000}} + \boxed{\phantom{000}}]\}$$

$$= 2 \times \{25 \times \boxed{\phantom{000}}\}$$

$$= 2 \times \boxed{\phantom{000}}$$

$$= \boxed{\phantom{000}}$$

- 3) Add -

$$1\frac{2}{3} + 2\frac{3}{5}$$

**Q.5 Attempt any one of the following questions.**

**[5]**

1. The percentage of literate people in the states of Maharashtra and Gujarat are given in the table below. Draw a joint bar graph for this data on a graph paper. (Scale on Y - axis : 1 cm = 10%)

State \ Year	2019	2020	2021	2022	2023
Maharashtra	45	56	65	75	80
Gujarat	35	52	62	65	85

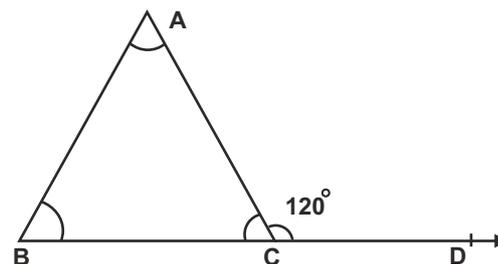
2. In the adjoining figure,

$\angle ACD$  is an exterior angle of  $\triangle ABC$ .

The measures of  $\angle A$  and  $\angle B$  are equal.

If  $m\angle ACD = 120^\circ$ , find the measures of

$\angle A$ ,  $\angle B$  and  $\angle C$  by completing following activity.



Solution -

Let  $m\angle A = m\angle B = x^\circ$

\  $m\angle A + \boxed{\phantom{00}} = \boxed{\phantom{00}}$  ..... Exterior angle property

\  $x^\circ + \boxed{\phantom{00}} = 120^\circ$

\  $\boxed{\phantom{00}} = 120^\circ$

\  $x^\circ = \frac{120}{2}$  ..... Dividing by two on both the sides.

\  $x^\circ = \boxed{\phantom{00}}$

\  $m\angle A = m\angle B = \boxed{\phantom{00}}$

As  $m\angle A + m\angle B + m\angle C = \boxed{\phantom{00}}$  ..... Property of measurement of interior angles in a triangle.

\  $m\angle A + m\angle B + m\angle C = 180^\circ$

\  $120^\circ + m\angle C = 180^\circ$

\  $m\angle C = 180^\circ - \boxed{\phantom{00}}$

\  $m\angle C = \boxed{\phantom{00}}^\circ$

\  $m\angle A = m\angle B = m\angle C = \boxed{\phantom{00}}$

