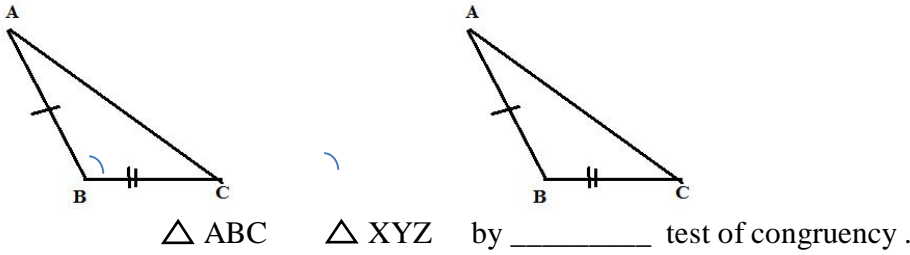


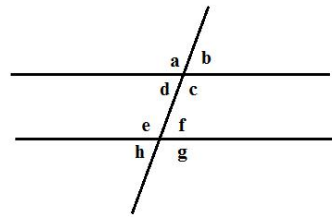
v) Observe the pair of triangles and state the test by which the triangles are congruent



Q.2 Solve any 4 questions

[8]

i) Observe the given figure and match the pair of angle s with their names



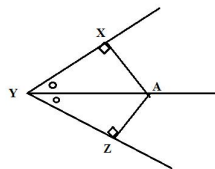
	A		B
1	Linear pair of angles	i.	d and e
2	Alternate angles	ii.	e and h
3	Corresponding angles	iii.	f and c
4	Interior angles	iv.	b and f
		v.	c and e

ii) The following table shows points on a number line and their co-ordinates. Check whether seg MN and seg PQ are congruent or not.

Point	L	M	N	P	Q	R
Co-ordinate	-5	0	8	-1	7	4

$l(MN) = \underline{\hspace{2cm}}$; $l(PQ) = \underline{\hspace{2cm}}$. $l(MN) \underline{\hspace{1cm}}$ $l(PQ)$

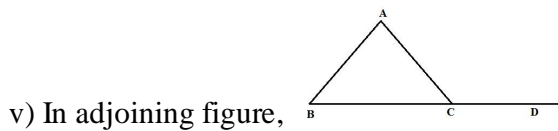
iii) In the adjoining figure, point A is on the bisector of $\angle XYZ$. If $AX = 2\text{cm}$, then



$l(AZ) = l(AX)$ reason _____.
 $l(AZ) = \underline{\hspace{2cm}}$.

iv) From the information shown in adjoining figure, $\triangle ABC \cong \triangle PQR$. Write test of congruence and the remaining congruent parts of the triangles.





ACD is an exterior angle of $\triangle ABC$ [Given]

$A = 40^\circ$, $B = 70^\circ$ [Given]

$ACD = A + B$
 $=$ _____

.....[Given]
[_____]

Q.3 Solve any 3

[9]

i) If two sides of a triangle are congruent then the angles opposite to them are congruent

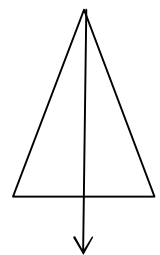
Given: In $\triangle ABC$, side AB _____

To Prove: $\angle C = \angle B$

Construction : Draw the bisector of $\angle BAC$ which intersects side BC at point D.

Proof: In $\triangle ABD$ and $\triangle ACD$

- seg AB = seg AC[Given]
- $\angle BAD = \angle CAD$ [_____]
- seg AD = seg AD[common side]
- $\triangle ABD \cong \triangle ACD$ [_____ test]
- $\angle C = \angle B$ [c.a.c.t]



ii) If the acute angles of a right angled triangle are 30° , 60° , then the length of side opposite to the angle 60° is $\frac{1}{2}$ times the hypotenuse.

Given: In $\triangle CAB$, $\angle A = 90^\circ$, $\angle B = 60^\circ$, $\angle C = 30^\circ$

To Prove: $AC = \frac{1}{2} BC$

Proof: In $\triangle CAB$, $\angle CAB = 90^\circ$...[Given]

$BC^2 = AC^2 + AB^2$...[_____]

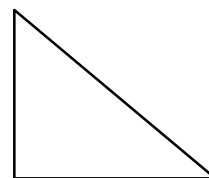
$BC^2 = AC^2 + (-BC)^2$...[_____]

$BC^2 = AC^2 + BC^2$

$AC^2 =$ _____

$AC^2 =$ _____

$AC =$ _____



iii) Observe the adjoining figure and find the measures of $\angle PRS$ & $\angle RTS$

Solution: $\angle PRS$ is an exterior angle of $\triangle PQR$

From theorem of remote interior angles,

$\angle PRS = \angle P + \angle Q$
 $=$ _____

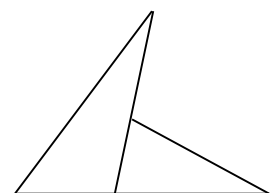
In $\triangle RTS$,

$\angle TRS + \angle RTS + \angle TSR =$ _____[sum of all angles of a triangle]

_____ + $\angle RTS$ + _____ = 180°

$\angle RTS + 90 = 180^\circ$

$\angle RTS =$ _____



iv) Find the values of x and y using the information shown in the adjoining figure. Find the measures of $\angle ABD$ and $\angle ACD$

Solution:

From the figure, $\angle ABC = x$, $\angle ACB = 50^\circ$

$\angle DCB = y$, $\angle DBC = 60^\circ$

In $\triangle ABC$,

Seg AC = Seg AB

$\angle ABC = \angle ACB$... [Isosceles triangle theorem]

$x = \underline{\hspace{2cm}}$

In $\triangle BDC$, Seg BD = Seg DC

$\angle DCB = \angle DBC$... [_____]

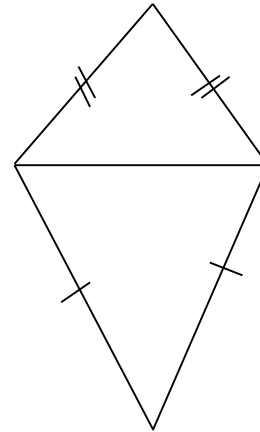
$y = 60^\circ$

$\angle ABD = \angle ABC + \angle DBC$... [Angle addition property]

$\angle ABD = \underline{\hspace{2cm}}$

Also, $\angle ACD = \angle ACB + \angle DCB$... [Angle addition property]

$\angle ACD = \underline{\hspace{2cm}}$



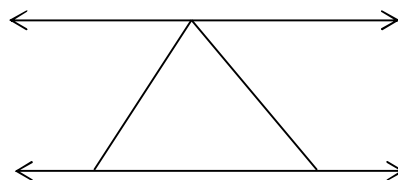
Q. 4 Solve any 2

[8]

i) Construct $\triangle ABC$, in which $BC = 6$ cm, $\angle ABC = 70^\circ$ and $AB + AC = 10.5$ cm

ii) Prove that “If the acute angle of a right angled triangle are $45^\circ - 45^\circ$ then the length of each side containing the right angle is _____”

iii) In figure line AB parallel to line CD, then find the values of w, x, y, z .



Q.5 Solve any 1

[5]

i) Construct $\triangle LMN$, in which $M = 60^\circ, N = 80^\circ$ and $LM + MN + NL = 11$ cm.

ii) Prove that “ In a right angled triangle, the length of the median drawn to the hypotenuse is half the length of the hypotenuse.”

