Maths Revision Test

Time : 45 mins

Max Marks : 30

Q1. Solve

The polynomials $P(t) = 4t^3 - st^2 + 7$ and $Q(t) = t^2 + st + 8$ leave the same remainder when divided by $(t - 1)$. Find the value of s. 1 mark

(b) Factorize. $x^3 + 13x^2 + 32x + 20$

1 marks

Q2. Check whether $7 + 3x$ is a factor of $3x^3 + 7x$.:

3 marks

Q3. Determine the value of

A) Expand $(-2x + 5y - 3z)^2$

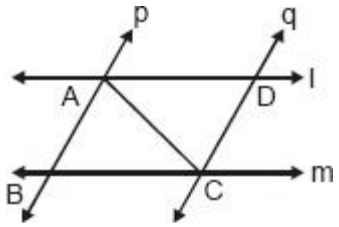
B) Expand $\left[x - \frac{2}{3}y\right]^3$

4marks

Q4 Prove that the angle formed by the bisector of interior angle A and the bisector of exterior angle B of a triangle ABC is half of angle C.

3 marks

Q5 l and m are two parallel lines intersected by another pair of parallel lines p and q (see figure). Show that $\Delta ABC \cong \Delta CDA$.



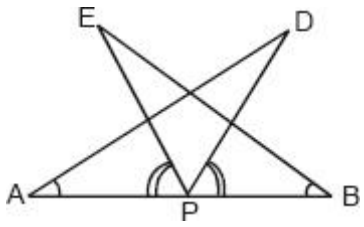
3 marks

Q6.

AB is a line segment and P is its mid-point. D and E are points on the same side of AB such that $\angle BAD = \angle ABE$ and $\angle EPA = \angle DPB$ (see figure). Show that

(i) $\Delta DAP \cong \Delta EBP$

(ii) AD = BE

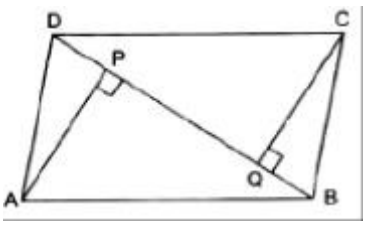


3 marks

Q7.
Show that if the diagonals of a quadrilateral are equal and bisect each other at right angles, then it is a square.

4 marks

Q8. ABCD is a parallelogram and AP and perpendiculars from vertices A and C on diagonal BD. Show that



(i) ΔAPB ≅ ΔCQD

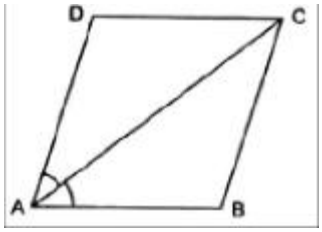
(ii) AP = CQ

4 marks

Q9. Diagonal AC of a parallelogram ABCD bisects ∠A (see figure). Show that

(i) it bisects ∠C also,

(ii) ABCD is a rhombus.



4 marks