Exercise 7.1

② Pencil ≅ Pen

Math Textbook ≅ Science Textbook

③ △ABC ≅ △FED

The corresponding ≅ parts of a △ are:
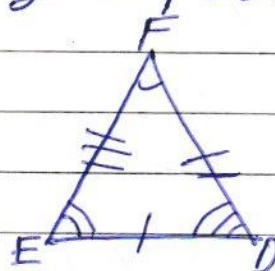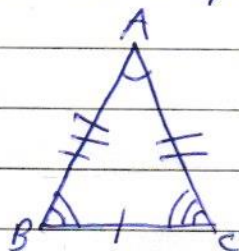
i) ∠A ≅ ∠F
ii) ∠B ≅ ∠E
iii) ∠C ≅ ∠D
iv) $\overline{BC}$ ≅ $\overline{ED}$
v) $\overline{AC}$ ≅ $\overline{FD}$
vi) $\overline{AB}$ ≅ $\overline{FE}$

④
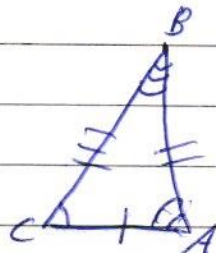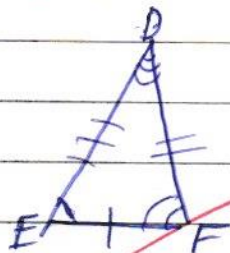
The corresponding ≅ parts of a △ are:
i) ∠E ≅ ∠C
ii) $\overline{EF}$ ≅ $\overline{CA}$
iii) ∠F ≅ ∠A

(iv) $\underline{DF = BA}$

[End of Exercise 7.1]

Example2: In $\triangle$'s ABC and PQR, AB=3.5cm, BC=7.1cm, AC=5cm, PQ=7.1, QR=5cm and PR=3.5cm
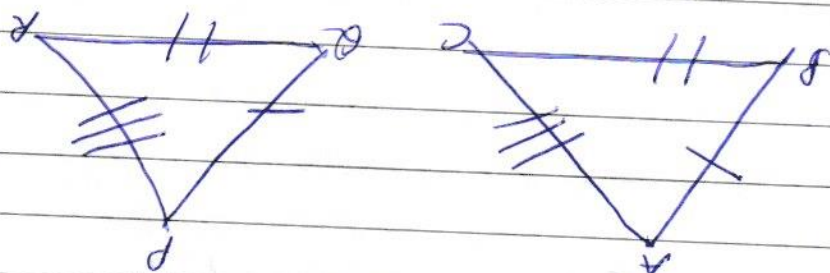
Ans

Here, AB = PR (=3.5cm)
BC = PQ (=7.1cm)
and AC = QR (=5cm)

This is showing that the three sides of one $\triangle$ are equal to the three sides of the other $\triangle$. So, by SSS congruence, the two $\triangle$'s are $\equiv$. From the above, these equally relations, it can be easily seen that A↔R, B↔P and C↔Q

So, we have $\triangle ABC \cong \triangle RPQ$

Example 3: $AC = CD$ and $AB = CB$

(i) State the three pairs of equal parts in $\triangle ABC$ and $\triangle CBD$
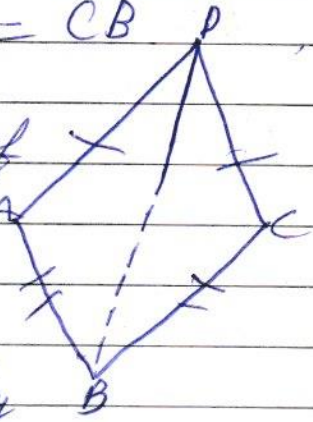
(ii) Is $\triangle ABD \cong CBD$? Why or why not?

(iii) Does ~~bisect~~ BD bisect $\angle ACC$? Give reason.

Solution: (i) In $\triangle ABD$ and $\triangle CBD$, the three pairs of equal parts are given bellow:

$$AB = CB \quad \text{(Given)}$$
$$AD = CD \quad \text{(Given)}$$
$$\text{and} \quad BD = BD \quad \text{(Common)}$$

(ii) From (i) above, $\triangle ABD \cong \triangle CBD$ (By SSS congruence rule)

(iii) $\angle ABD = \angle CBD$ (corresponding parts of congruent $\triangle$)

So, BD bisects $\angle ABC$