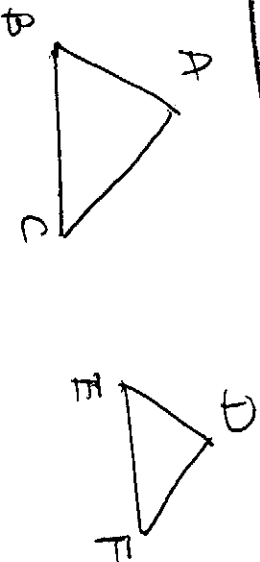


① SSS SIDE SIDE SIDE SIMILARITY THEOREM



IF  $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$  then

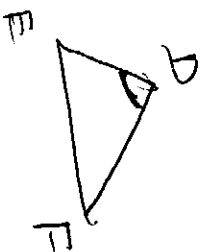
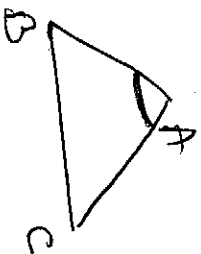
$\Delta ABC \sim \Delta DEF$

SIDE ANGLE SIDE

SIMILARITY THEOREM

②

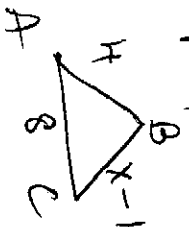
SAS



IF  $\angle A \cong \angle D$  and  $\frac{AB}{DE} = \frac{AC}{DF}$

Then  $\Delta ABC \sim \Delta DEF$

Ex: Find the value of X that makes  $\Delta ABC \sim \Delta DEF$ .



~~$\frac{4}{12} = \frac{x-1}{18}$~~

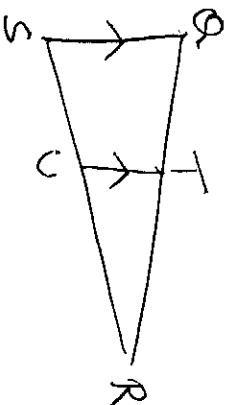
$\frac{12(x-1)}{12} = \frac{72}{12}$

$x-1 = 6$

$x = 7$

Mr.Reddy's Notes 6.6 Proportionality Theorems Geometry

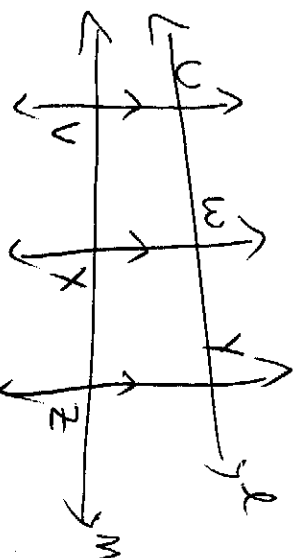
1 TRIANGLE PROPORTIONALITY THEOREM - IF A LINE PARALLEL TO ONE SIDE OF A TRIANGLE INTERSECTS THE OTHER TWO SIDES, THEN IT DIVIDES THE TWO SIDES PROPORTIONALLY.



① IF  $\overline{ST} \parallel \overline{PQ}$  then  $\frac{RT}{TQ} = \frac{RU}{US}$ .

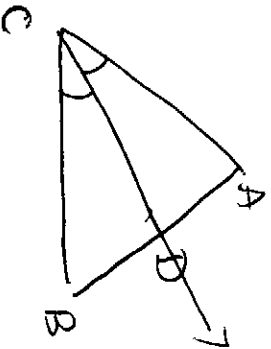
② IF  $\frac{RT}{TQ} = \frac{RU}{US}$  then  $\overline{ST} \parallel \overline{PQ}$

II IF THREE PARALLEL LINES INTERSECT TWO TRANSVERALS, then they divide the transversals PROPORTIONALLY.



$$\frac{UW}{WY} = \frac{UV}{VZ}$$

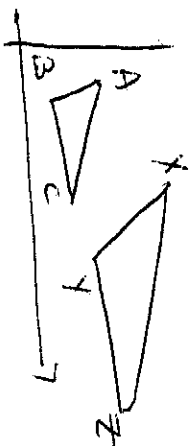
III



$$\frac{AD}{DB} = \frac{CA}{CB}$$

Mr.Reddy's Notes----- 6.7 Similarity Transformations Geometry

1) DILATION IS A TRANSFORMATION THAT STRETCHES OR SHRINKS A FIGURE BY CREATING A SIMILAR FIGURE.



2). SCALE FACTOR:- IT IS THE RATIO OF THE LENGTH OF THE IMAGE TO THE CORRESPONDING SIDE LENGTH OF ORIGINAL FIGURE.  $\Delta XYZ$  IS IMAGE OF  $\Delta ABC$ . CENTER OF DILATION IS  $(0,0)$ . Scale Factor IS  $\frac{XY}{AB}$

3) NOTATION OF DILATION:-  $K$  IS CONSTANT.

$$(X, Y) \rightarrow (kX, kY)$$

- 1) IF  $0 < k < 1$ ;  $\rightarrow$  REDUCTION
- 2) IF  $k > 1$ ;  $\rightarrow$  ENLARGEMENT