Name: Key



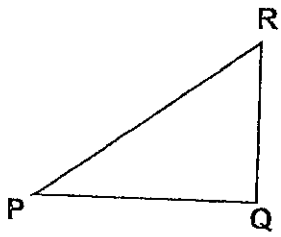
uestions 1 through 9 refer to the following:

Supply the missing reason(s) for the given proof.

1)

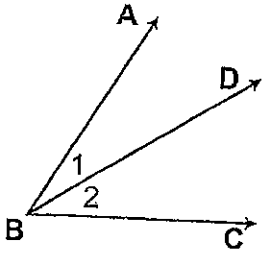
| STATEMENTS | REASONS |
|---|---|
| (1) $\overline{AC} \cong \overline{CB}$ | (1) Given |
| (2) C is the midpoint of $\overline{AB}$. | (2) A midpoint divides a segment into 2 $\cong$ segments |


2)



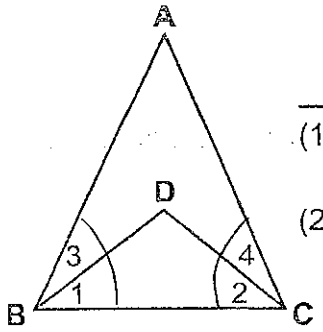

| STATEMENTS | REASONS |
|---|---|
| (1) $\overline{PQ} \perp \overline{QR}$ | (1) Given |
| (2) $\angle Q$ is a right angle. | (2) $\perp$ lines form right $\angle$s |

3)



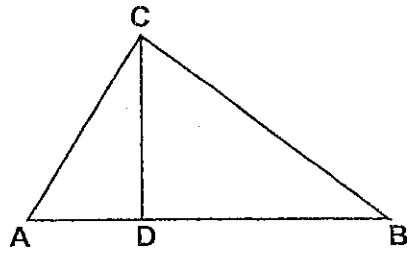

| STATEMENTS | REASONS |
|---|---|
| (1) $\overrightarrow{BD}$ bisects $\angle ABC$ | (1) Given |
| (2) $\angle 1 \cong \angle 2$ | (2) An $\angle$ bisector divides an $\angle$ into 2 $\cong$ $\angle$s |

4)



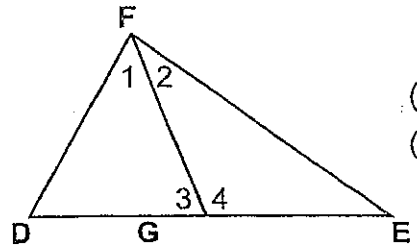

| STATEMENTS | REASONS |
|---|---|
| (1) $m\angle ABC = m\angle ACB$, $m\angle 3 = m\angle 4$ | (1) Given |
| (2) $m\angle 1 \cong m\angle 2$ | (2) Subtraction Postulate |

5)



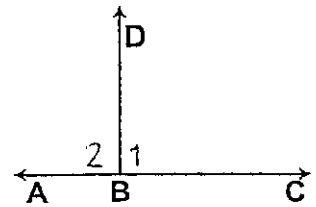

| STATEMENTS | REASONS |
|---|---|
| (1) $\overline{CD}$ is the altitude to $\overline{AB}$. | (1) Given |
| (2) $\overline{CD} \perp \overline{AB}$ | (2) An altitude is $\perp$ to the base |

6)



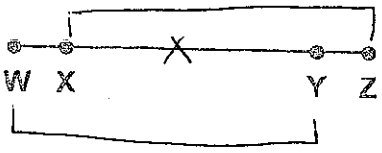

| STATEMENTS | REASONS |
|---|---|
| (1) $\overline{FG}$ bisects $\angle DFE$. | (1) Given |
| (2) $\angle 1 \cong \angle 2$ | (2) An $\angle$ bisector divides an $\angle$ into 2 $\cong$ $\angle$s |

7)



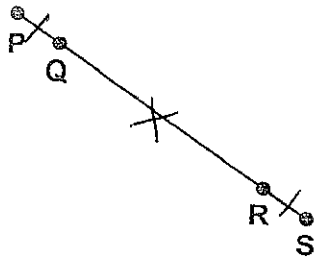

| STATEMENTS | REASONS |
|---|---|
| (1) $\overleftrightarrow{BD} \perp \overleftrightarrow{AC}$ | (1) Given |
| (2) $\angle 1$ is a right $\angle$. and $\angle 2$ is a right $\angle$ | (2) $\perp$ lines form right $\angle$s |
| (3) $\angle 1 \cong \angle 2$ | (3) All right $\angle$s are $\cong$ |

8)



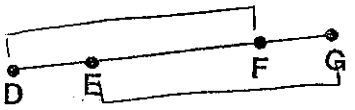

| STATEMENTS | REASONS |
|---|---|
| (1) WY = XZ | (1) Given |
| (2) XY = XY | (2) Reflexive |
| (3) WX = YZ | (3) Subtraction Postulate |

9)




| STATEMENTS | REASONS |
|---|---|
| (1) PQ = RS | (1) Given |
| (2) QR = QR | (2) Reflexive |
| (3) PR = QS | (3) Addition Postulate |

10)

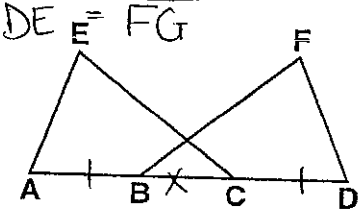



Given: DF = EG

Prove: DE = FG

| S | R |
|---|---|
| ① DF = EG | ① Given |
| ② EF = EF | ② Reflexive |
| ③ DF = EG<br>− EF = EF<br>DE = FG | ③ Subtraction Postulate |

11)

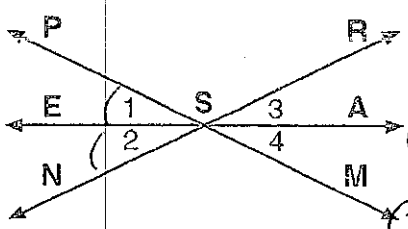



Given: $\overline{AB} \cong \overline{CD}$

Prove: $\overline{AC} \cong \overline{BD}$

| S | R |
|---|---|
| ① $\overline{AB} \cong \overline{CD}$ | ① Given |
| ② $\overline{BC} \cong \overline{BC}$ | ② Reflexive |
| ③ $\overline{AB} \cong \overline{CD}$<br>+ $\overline{BC} \cong \overline{BC}$<br>$\overline{AC} \cong \overline{BD}$ | ③ Addition Postulate |

12)

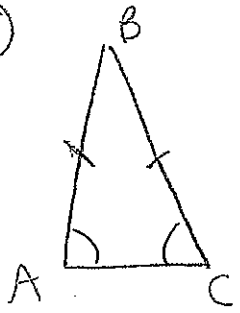



Given: $\angle 1 \cong \angle 2$

Prove: $\overline{SA}$ bisects $\angle RSM$

| S | R |
|---|---|
| ① $\angle 1 \cong \angle 2$ | ① Given |
| ② $\angle 2 \cong \angle 3$ | ② Intersecting lines form $\cong$ vertical $\angle$s |
| $\angle 1 \cong \angle 4$ | ③ Transitive |
| ③ $\angle 1 \cong \angle 3$ | ④ Transitive |
| ④ $\angle 3 \cong \angle 4$ | ⑤ An $\angle$ bisector divides an $\angle$ into 2 $\cong$ $\angle$s |
| ⑤ $\overrightarrow{SA}$ bisects $\angle RSM$ | |

(13)

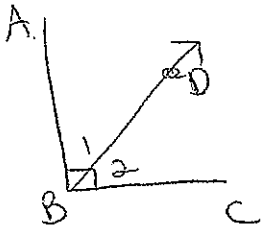



a) What $\measuredangle$ are $\cong$? $\angle A \cong \angle C$

b) What is the vertex $\measuredangle$? $\angle B$

c) What side is the base? $\overline{AC}$

(14)




If $\overline{BD}$ is the angle bisector:

a) $m\measuredangle 1 = 45°$

b) $m\measuredangle 2 = 45°$

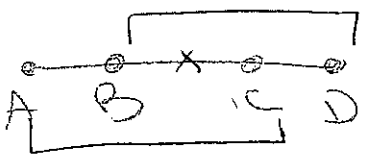
c) What $\measuredangle$ is the sum of $\measuredangle 1$ and $\measuredangle 2$? 90°

What postulate is it?

(15) $\overline{RX} \cong \overline{RX}$ Reflexive

(16) if $CD = ED$ then $\frac{1}{4}CD = \frac{1}{4}ED$ Multiplication Postulate

(17) if $AC \cong BD$ then $AB \cong CD$ Subtraction Postulate




(18) $\overline{RX} \cong \overline{XR}$ Symmetri