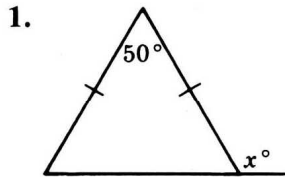


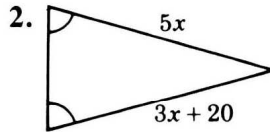
# Isosceles Triangles; Proving Triangles Congruent

For use after Section 4-5

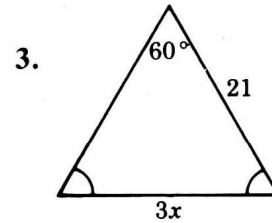
In Exercises 1-5, find the value of  $x$ .



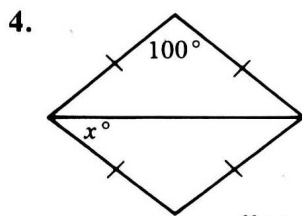
$x =$  \_\_\_\_\_



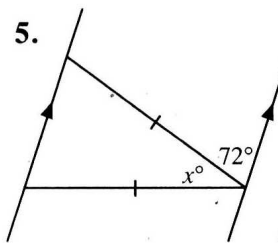
$x =$  \_\_\_\_\_



$x =$  \_\_\_\_\_



$x =$  \_\_\_\_\_



$x =$  \_\_\_\_\_

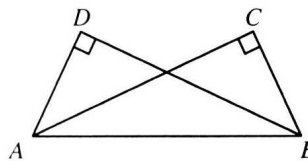
Supply the missing reasons in each proof.

6. Given:  $\angle C$  and  $\angle D$  are rt. angles;

$\overline{AD} \cong \overline{BC}$

Prove:  $\triangle BAD \cong \triangle ABC$

**Proof:**



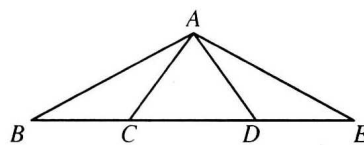
Statements	Reasons
1. $\angle C$ and $\angle D$ are rt. $\angle$ s.	1. _____
2. _____	2. _____
3. $\overline{AD} \cong \overline{BC}$	3. _____
4. _____	4. _____
5. _____	5. _____

7. Given:  $\overline{AB} \cong \overline{AE}$ ;

$\angle ACD \cong \angle ADC$

Prove:  $\overline{BC} \cong \overline{DE}$

**Proof:**

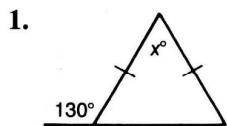


Statements	Reasons
1. $\overline{AB} \cong \overline{AE}$ ; $\angle ACD \cong \angle ADC$	1. _____
2. $\angle B \cong \angle E$	2. _____
3. $\angle ACB \cong \angle ADE$	3. _____
4. $\triangle ABC \cong \triangle AED$	4. _____
5. $\overline{BC} \cong \overline{DE}$	5. _____

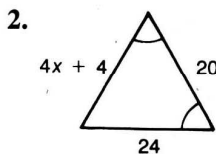
# Practice 15

## Some Theorems Based on Congruent Triangles

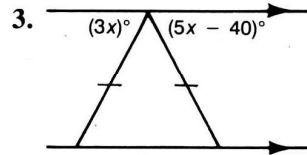
Find the value of  $x$ .



$x =$  \_\_\_\_\_



$x =$  \_\_\_\_\_



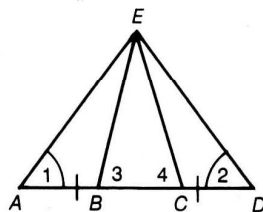
$x =$  \_\_\_\_\_

4. Supply the missing statements and reasons.

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

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

Prove:  $\angle 3 \cong \angle 4$



Proof:

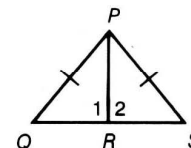
Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. _____
2. $\overline{EA} \cong \overline{ED}$	2. _____
3. $\overline{AB} \cong \overline{CD}$	3. _____
4. $\triangle$ _____ $\cong \triangle$ _____	4. _____
5. $\overline{EB} \cong \overline{EC}$	5. _____
6. $\angle 3 \cong \angle 4$	6. _____

5. a. What additional information about  $\angle 1$  and  $\angle 2$  would be needed

to prove that  $\triangle PRQ \cong \triangle PRS$ ? \_\_\_\_\_

b. Using the additional information in part (a), name *two* theorems

that could be used to prove the triangles congruent. \_\_\_\_\_



6. Write a two-column proof.

Given:  $\angle F \cong \angle H$ ;

$\overline{GI}$  bisects  $\angle FGH$ .

Prove:  $\overline{FI} \cong \overline{HI}$

