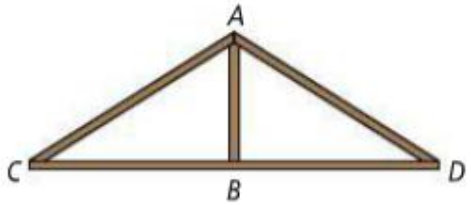
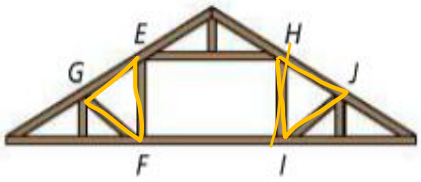
Unit 3B - Day 1 HW
Congruent Triangles & Congruency with Transformations
Pg. 222
9, 10-18 EVEN, 22-25, 30-31, 38, 39

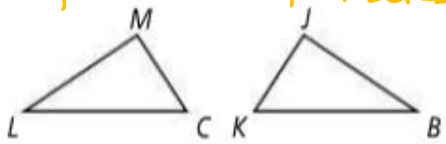




9. The attic frame truss (above right) provides open space in the center for storage. In this truss, $\triangle EFG \cong \triangle HIJ$. List the congruent corresponding parts.

$\overline{EF} \cong \overline{HI}$, $\overline{FG} \cong \overline{IJ}$, $\overline{GE} \cong \overline{JH}$, $\angle EFG \cong \angle HIJ$, $\angle FGE \cong \angle IJH$, $\angle FEG \cong \angle IHJ$

$\triangle LMC \cong \triangle BJK$. Complete the congruence statements.



10. $\overline{LC} \cong$? $\overline{BK}$

11. $\overline{KJ} \cong$?

12. $\overline{JB} \cong$? $\overline{ML}$

13. $\angle L \cong$?

14. $\angle K \cong$? $\angle C$

15. $\angle M \cong$?

16. $\triangle CML \cong$? $\triangle KJB$

17. $\triangle KBJ \cong$?

18. $\triangle MLC \cong$? $\triangle JBK$

19. $\triangle JKB \cong$?

POLY ≅ SIDE. List each of the following.

20. four pairs of congruent sides

21. four pairs of congruent angles

At an archeological site, the remains of two ancient step pyramids are congruent. If $ABCD \cong EFGH$, find each of the following. (Diagrams are not to scale.) See Problem 2.

22. AD 335 ft

23. GH 45 ft

24. $m\angle GHE$ 52°

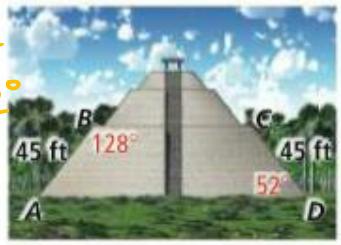
25. $m\angle BAD$ 52°

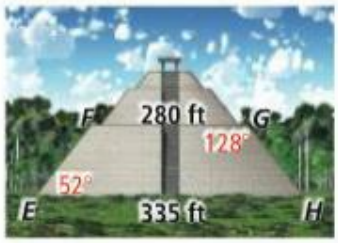
26. EF

27. BC

28. $m\angle DCB$

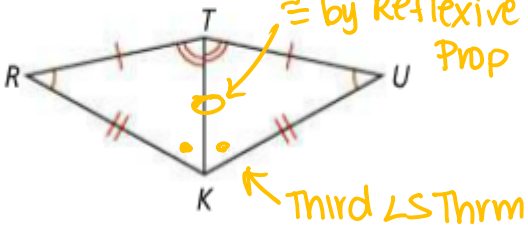
29. $m\angle EFG$





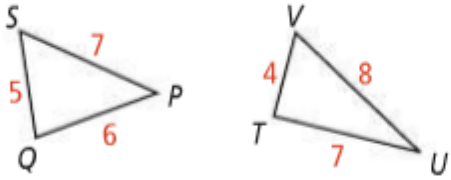
For Exercises 30 and 31, can you conclude that the triangles are congruent? Justify your answers. See Problem 3.

30. $\triangle TRK$ and $\triangle TUK$ yes! ≅ by Reflexive Prop



Third ∠S Thm

31. $\triangle SPQ$ and $\triangle TUV$ no... Sides not ≅



Algebra $\triangle ABC \cong \triangle DEF$. **Find the measures of the given angles or the lengths of the given sides.**

38. $AC = 7a + 5, DF = 5a + 9$

$\overline{AC} \cong \overline{DF}$

$7a+5 = 5a+9$

$2a = 4$

$a = 2$

$AC = 7(2) + 5$

$AC = 19$

$DF = 19$

39. Think About a Plan $\triangle ABC \cong \triangle DBE$. Find the value of x.

- What does it mean for two triangles to be congruent? → all corr. sides/∠s ≅
- Which angle measures do you already know? ∠A ≅ ∠D, ∠C ≅ ∠E, ∠CBA ≅ ∠EBD
- How can you find the missing angle measure in a triangle? Use triangle sum theorem (int. ∠s of △s = 180°)

① $x + 5 = 48$

$x = 43$