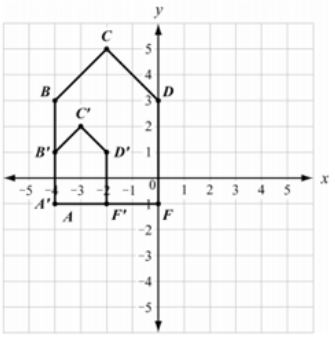
Unit 2 Test
Re-Take Review Handout

Do NOT write on this handout please!

1. Figure A'B'C'D'F' is a dilation of figure ABCDF by a scale factor of $\frac{1}{2}$. The dilation is centered at (-4, -1). Write **TRUE** or **FALSE** for each statement.



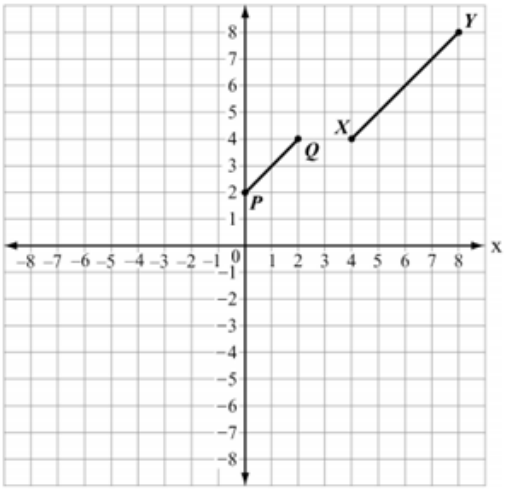
a) $\frac{AB}{A'B'} = \frac{B'C'}{BC}$

b) $\frac{AB}{A'B'} = \frac{BC}{D'F'}$

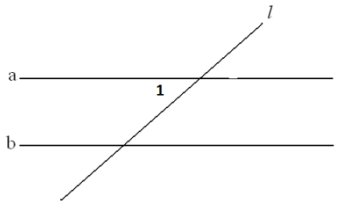
c) $\frac{AB}{A'B'} = \frac{D'F'}{BC}$

d) $\frac{AB}{A'B'} = \frac{BC}{B'C'}$

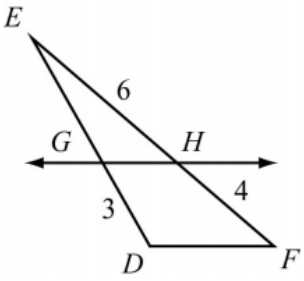
2. In a coordinate plane, segment $\overline{PQ}$ is the result of a dilation of segment $\overline{XY}$ by a scale factor of $\frac{1}{2}$. What point is the center of dilation?



3. For parallel lines cut by a transversal, ∠1 and ∠2 are alternate interior angles and ∠2 and ∠3 are vertical angles. Describe ∠1 and ∠3?

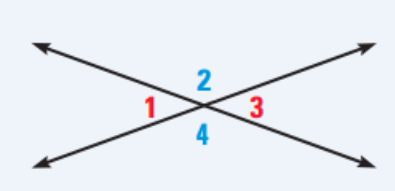


4. In the triangle shown, $\overline{GH} \| \overline{DF}$. What is the length of $\overline{GE}$?



5. What is the justification for the third step in the proof below?

Theorem: Vertical Angles are Congruent

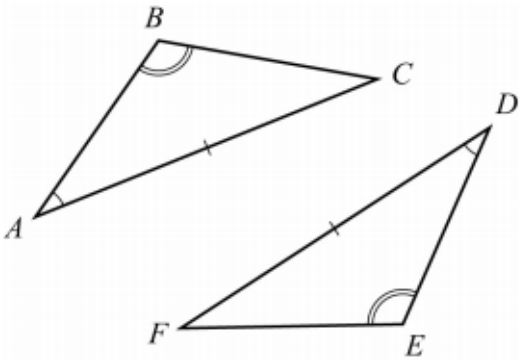


Given: $\angle 1$ and $\angle 2$ are a linear pair
$\angle 3$ and $\angle 4$ are a linear pair

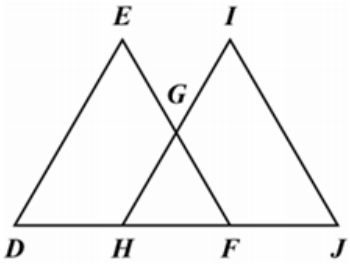
Prove: $\angle 1 \cong \angle 3$

Statement	Justification
1. $\angle 1$ and $\angle 2$ are a linear pair $\angle 3$ and $\angle 4$ are a linear pair	1. Given
2. $\angle 1$ and $\angle 2$ are supplementary $\angle 3$ and $\angle 4$ are supplementary	2. Linear Pair Theorem
3. $\angle 1 + \angle 2 = 180°$ and $\angle 2 + \angle 3 = 180°$	3. ?
4. $\angle 1 + \angle 2 = \angle 2 + \angle 3$	4. Substitution property of equality
5. $\angle 1 \cong \angle 3$	5. Subtraction property of equality

6. Consider the triangles shown. What can be used to prove the triangle are congruent?



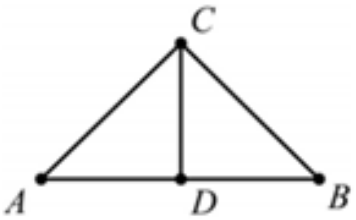
7. In this diagram $\overline{DE} \cong \overline{JI}$ and $\angle D \cong \angle J$.



What additional information do you need to prove that ΔDEF is congruent to ΔJIH by the SAS postulate?

Use the figure below to answer questions 8-9.

In this diagram, $\overline{CD}$ is the perpendicular bisector of $\overline{AB}$. The two-column proof shows that $\overline{AC}$ is congruent to $\overline{BC}$.

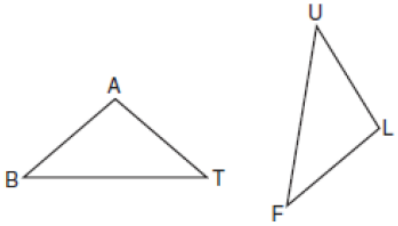


Step	Statement	Justification
1	$\overline{CD}$ is the perpendicular bisector of $\overline{AB}$	Given
2	_____?_____	Definition of bisector
3	$\overline{CD} \cong \overline{CD}$	Reflexive Property
4	$\angle ADC$ and $\angle BDC$ are right angles	Definition of perpendicular lines
5	$\angle ADC \cong \angle BDC$	All right angles are congruent
6	$\triangle ADC \cong \triangle BDC$	_____?_____
7	$\overline{AC} \cong \overline{BC}$	CPCTC

8. What is the correct statement for step 2?

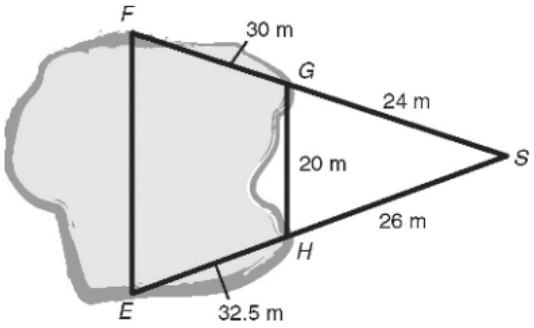
9. Which theorem or postulate would justify Step 6?

10. In the diagram of triangles BAT and FLU, $\angle B \cong \angle F$ and $\overline{BA} \cong \overline{FL}$.

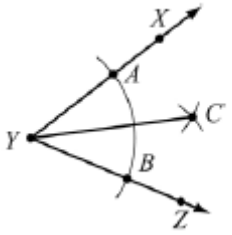


Which statement is needed to prove $\Delta BAT \cong \Delta FLU$?

11. The figure below shows two similar triangles. What is the length of $\overline{EF}$?

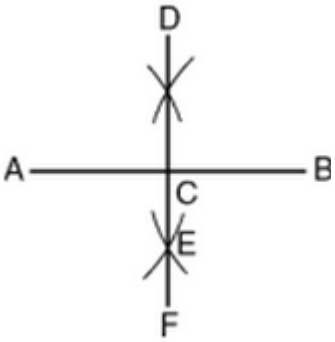


12. Consider the construction of the angle bisector shown.

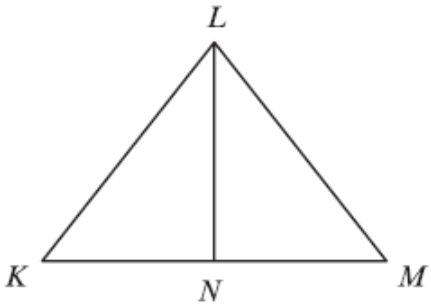


Write out the steps to create this construction.

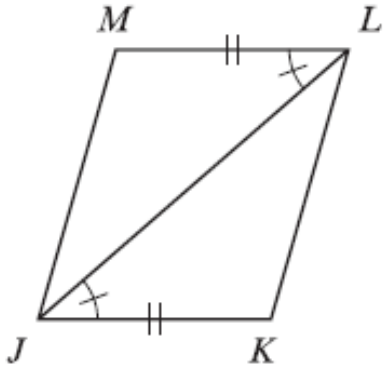
13. Describe the construction shown in the accompanying diagram.



14. In this figure, $\overline{LN} \perp \overline{KM}$. What is the missing congruence that you would need to prove $\Delta KLN \cong \Delta MLN$?



15. This figure shows quadrilateral JKLM. Write **TRUE** or **FALSE** for each statement.



a. $\angle JLM \cong \angle LJK$

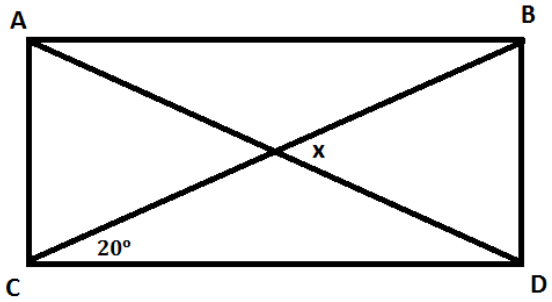
b. Show that $\overline{JK} \cong \overline{LM}$.

c. Show that $\Delta JKL \cong \Delta LMJ$

d. Show that $\Delta JKL \cong \Delta JLM$

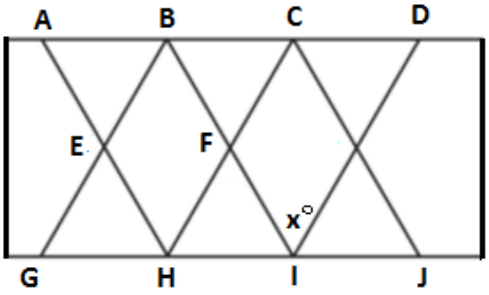
16. Use line segment $\overline{HI}$ to answer the question. List the steps to draw the perpendicular bisector of $\overline{HI}$ through midpoint J.

17. The figure shows rectangle ABCD. What is the value of *x*?

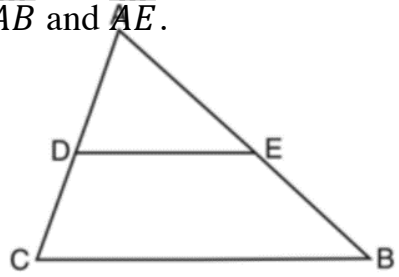


18. In the rectangle below, $\overline{AH} \parallel \overline{BI} \parallel \overline{CJ}$, $\overline{GB} \parallel \overline{HC} \parallel \overline{ID}$, $\angle ABE = 54°$, and $\angle CBF = 54°$.

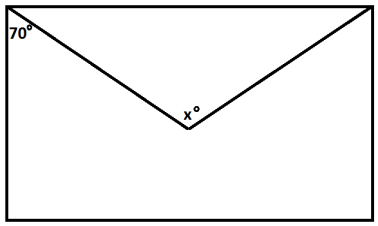
Find the value of *x*.



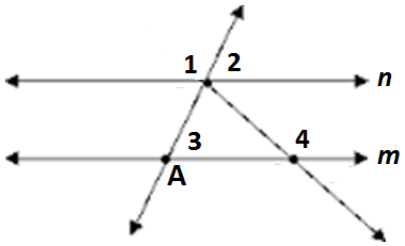
19. In the figure below, $\overline{AC} = 2\overline{AD}$. Prove that $\Delta ADE \sim \Delta ACB$ by writing an equation just like $\overline{AC} = 2\overline{AD}$ using side lengths $\overline{AB}$ and $\overline{AE}$.



20. The figure below is a rectangular envelope with a flap shaped as an isosceles triangle. Find the value of x.



21. In the figure below, lines ***n*** and ***m*** are parallel. Which angle is congruent to angle **A**?



22. ΔABC is similar but not congruent to ΔDEF . Write **TRUE** or **FALSE** for each statement.

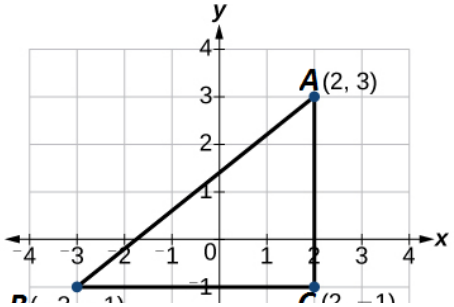
a) ΔABC was dilated by a scale factor between 0 and 1

b) $\overline{AB} = \overline{DE}$

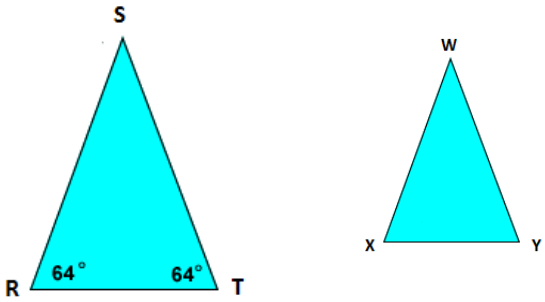
c) $\frac{AB}{DE} = \frac{BC}{EF}$

d) $\angle A = \angle D$□

23. Right triangle ABC is shown below. If $\Delta ABC \sim \Delta DEF$ then what is the ratio of side EF to side DF?



24. Triangle SRT is an isosceles triangle. $\Delta SRT \sim \Delta WXY$. Write **TRUE** or **FALSE** for each statement.



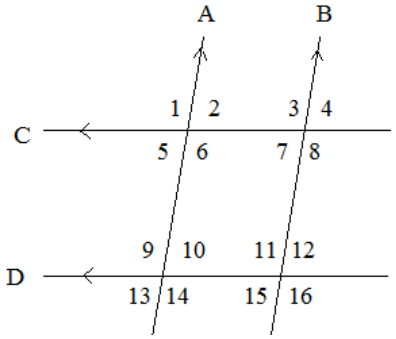
a) $\angle S = \angle W$

b) $\angle W = \angle X + \angle Y$

c) $\angle X = 64°$

d) $\angle W = 52°$

Use the figure below to answer questions 25-26.



25. Label each pair of angles is "**supplementary**" and "**not supplementary**."

a) 3 and 12

b) 11 and 12

c) 4 and 15

d) 1 and 13

26. Write **TRUE** or **FALSE** for each statement.

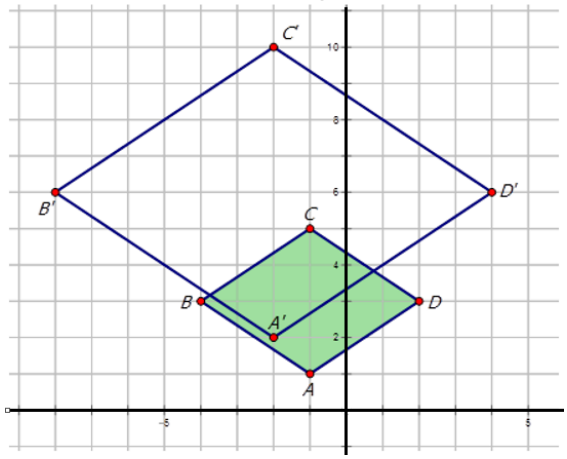
a) $\angle 9 - \angle 16 = 180^o$

b) $\angle 1 + \angle 6 = 180^o$

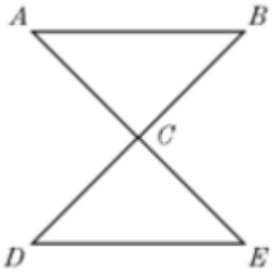
c) $\angle 10 - 180^o = \angle 11$

d) C. $\angle 2 = 180^o - \angle 6$

27. Triangle ABC has been dilated to its image A'B'C'. What is the scale factor and center of dilation?



28. In the triangles below, segments $\overline{AE}$ and $\overline{BD}$ bisect each other. What congruence theorem proves $\Delta ABC \cong \Delta EDC$?

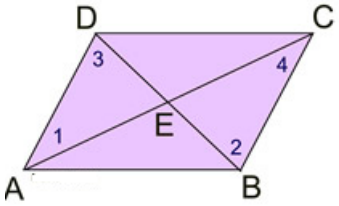


29. Theorem: The diagonals of a parallelogram bisect each other.

Given: ABCD is a parallelogram

Prove: $\overline{DB}$ bisects $\overline{AC}$ and $\overline{AC}$ bisects $\overline{DB}$

i.e. $\overline{AE} \cong \overline{EC}$ and $\overline{DE} \cong \overline{EB}$



Statement	Justification
1. ABCD is a parallelogram	1. Given
2. $\overline{AB} \parallel \overline{CD}$; $\overline{AD} \parallel \overline{BC}$	2. Definition of a parallelogram
3. $\angle 1 \cong \angle 4$; $\angle 2 \cong \angle 3$	3. Alternate interior angles are congruent
4. $\overline{AD} \cong \overline{CB}$	4. Opposite sides of a parallelogram are congruent
5. $\Delta DAE \cong \Delta BCE$	5. ?
6. $\overline{AE} \cong \overline{EC}$ and $\overline{DE} \cong \overline{EB}$	6. Corresponding parts of congruent triangles are congruent (CPCTC)

What congruence theorem justifies statement 5?