Name _____ Class _____ Date _____

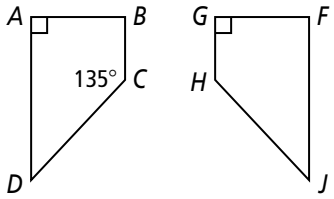
Standardized Test Prep

Congruent Figures

Multiple Choice

For Exercises 1–6, choose the correct letter.

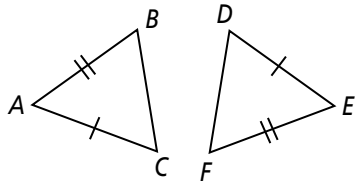
1. The pair of polygons at the right is congruent. What is $m\angle J$?



(A) 45 (C) 135

(B) 90 (D) 145

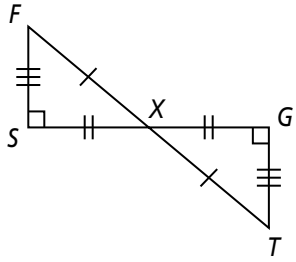
2. The triangles at the right are congruent. Which of the following statements must be true?



(F) $\angle A \cong \angle D$ (H) $\overline{AB} \cong \overline{DE}$

(G) $\angle B \cong \angle E$ (I) $\overline{BC} \cong \overline{FD}$

3. Given the diagram at the right, which of the following must be true?



(A) $\triangle XSF \cong \triangle XTG$ (C) $\triangle FXS \cong \triangle XGT$

(B) $\triangle SXF \cong \triangle GXT$ (D) $\triangle FXS \cong \triangle GXT$

4. If $\triangle RST \cong \triangle XYZ$, which of the following need not be true?

(F) $\angle R \cong \angle X$ (G) $\angle T \cong \angle Z$ (H) $\overline{RT} \cong \overline{XZ}$ (I) $\overline{SR} \cong \overline{YZ}$

5. If $\triangle ABC \cong \triangle DEF$, $m\angle A = 50$, and $m\angle E = 30$, what is $m\angle C$?

(A) 30 (B) 50 (C) 100 (D) 120

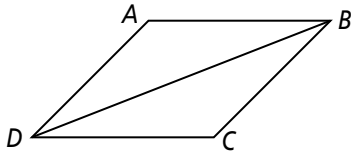
6. If $ABCD \cong QRST$, $m\angle A = x - 10$, and $m\angle Q = 2x - 30$, what is $m\angle A$?

(F) 10 (G) 20 (H) 30 (I) 40

Short Response

7. **Given:** $\overline{AB} \parallel \overline{DC}$, $\overline{AD} \parallel \overline{BC}$, $\overline{AB} \cong \overline{CD}$, $\overline{AD} \cong \overline{CB}$

Prove: $\triangle ABD \cong \triangle CDB$



Name _____ Class _____ Date _____

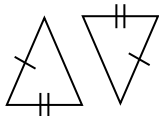
Standardized Test Prep

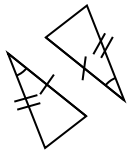
Triangle Congruence by SSS and SAS

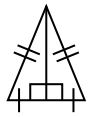
Multiple Choice

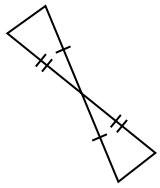
For Exercises 1–4, choose the correct letter.

1. Which pair of triangles can be proved congruent by SSS?

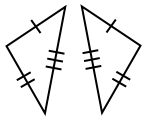
Ⓐ 

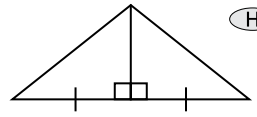
Ⓑ 

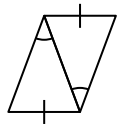
Ⓒ 

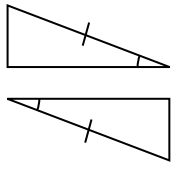
Ⓓ 

2. Which pair of triangles can be proved congruent by SAS?

Ⓕ 

Ⓖ 

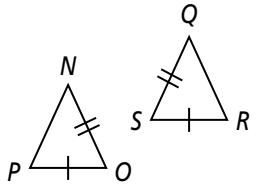
Ⓗ 

Ⓘ 

3. What additional information do you need to prove $\triangle NOP \cong \triangle QSR$?

Ⓐ $\overline{PN} \cong \overline{SQ}$ Ⓒ $\angle P \cong \angle S$

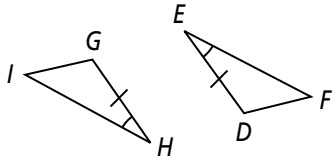
Ⓑ $\overline{NO} \cong \overline{QR}$ Ⓓ $\angle O \cong \angle S$



4. What additional information do you need to prove $\triangle GHI \cong \triangle DEF$?

Ⓕ $\overline{HI} \cong \overline{EF}$ Ⓗ $\angle F \cong \angle G$

Ⓖ $\overline{HI} \cong \overline{ED}$ Ⓘ $\overline{GI} \cong \overline{DF}$

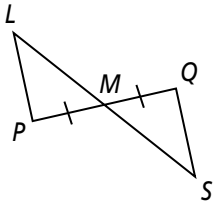


Short Response

5. Write a two-column proof.

Given: M is the midpoint of $\overline{LS}$, $\overline{PM} \cong \overline{QM}$.

Prove: $\triangle LMP \cong \triangle SMQ$



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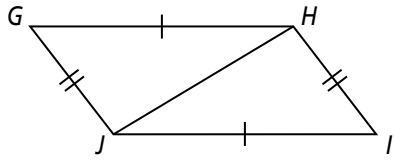
Standardized Test Prep

Using Corresponding Parts of Congruent Triangles

Multiple Choice

For Exercises 1–6, choose the correct letter.

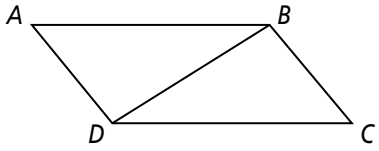
1. Based on the given information in the figure at the right, how can you justify that $\triangle JHG \cong \triangle HJI$?



(A) ASA (C) AAS

(B) SSS (D) ASA

2. In the figure at the right the following is true: $\angle ABD \cong \angle CDB$ and $\angle DBC \cong \angle BDA$. How can you justify that $\triangle ABD \cong \triangle CDB$?



(F) SAS (H) ASA

(G) SSS (I) CPCTC

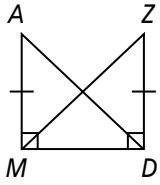
3. $\triangle BRM \cong \triangle KYZ$. How can you justify that $\overline{YZ} \cong \overline{RM}$?

(A) CPCTC (B) SAS (C) ASA (D) SSS

4. Which statement *cannot* be justified given only that $\triangle PBJ \cong \triangle TIM$?

(F) $\overline{PB} \cong \overline{TI}$ (G) $\angle B \cong \angle I$ (H) $\angle BJP \cong \angle IMT$ (I) $\overline{JP} \cong \overline{MI}$

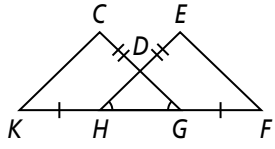
5. In the figure at the right, which theorem or postulate can you use to prove $\triangle ADM \cong \triangle ZMD$?



(A) ASA (C) SAS

(B) SSS (D) AAS

6. In the figure at the right, which theorem or postulate can you use to prove $\triangle KGC \cong \triangle FHE$?

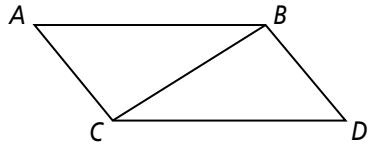


(F) ASA (H) SAS

(G) SSS (I) AAS

Short Response

7. What would a brief plan for the following proof look like?



Given: $\overline{AB} \cong \overline{DC}$, $\angle ABC \cong \angle DCB$

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

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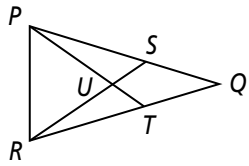
Standardized Test Prep

Congruence in Overlapping Triangles

Multiple Choice

For Exercises 1–5, choose the correct letter.

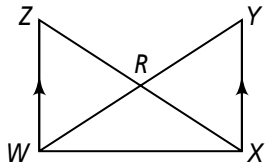
1. What is the common angle of $\triangle PQT$ and $\triangle RSQ$?



(A) $\angle PQT$ (C) $\angle SRQ$

(B) $\angle SPT$ (D) $\angle SUT$

Use the following information for Exercises 2–5.



Given: $\triangle ZWX \cong \triangle YXW$, $\overline{ZW} \parallel \overline{YX}$

Prove: $\triangle ZWR \cong \triangle YRX$

2. Which corresponding parts statement is needed to prove $\triangle ZWR \cong \triangle YRX$?

(F) $\angle ZWR \cong \angle YXR$ (H) $ZW = YX$

(G) $\angle Z \cong \angle R$ (I) $WX = WX$

3. A classmate writes the statement $\angle ZRW \cong \angle YRX$ to help prove the congruence of the triangles. What reason should the classmate give?

(A) Given

(B) Angles cut by a bisector are congruent.

(C) Base angles of an isosceles triangle are congruent.

(D) Vertical angles are congruent.

4. After using the congruence statements from Exercises 2 and 3, which statement can be used to prove the triangles congruent?

(F) $\angle Z \cong \angle Y$ (H) $\overline{WX} \cong \overline{WX}$

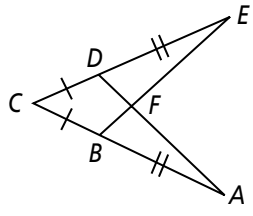
(G) $\angle ZWR \cong \angle RYX$ (I) $\overline{WR} \cong \overline{RX}$

5. Which theorem or postulate will prove $\triangle ZWR \cong \triangle YRX$?

(A) SAS (B) SSS (C) ASA (D) AAD

Short Response

6. In the diagram at the right, which two triangles should be proved congruent first to help prove $\triangle ABF \cong \triangle EDF$?



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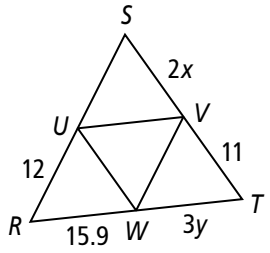
Standardized Test Prep

Midsegments of Triangles

Gridded Response

Solve each exercise and enter your answer on the grid provided.

In $\triangle RST$, U is the midpoint of $\overline{RS}$, V is the midpoint of $\overline{ST}$, and W is the midpoint of $\overline{TR}$.



1. What is the length of $\overline{RS}$?

2. What is the value of x?

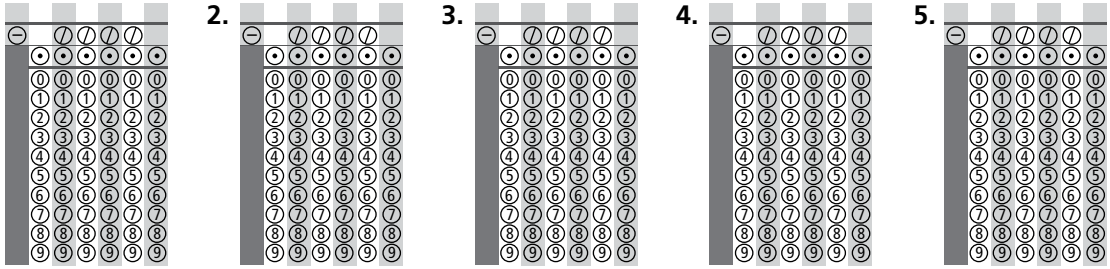
3. What is the value of y?

4. What is the length of $\overline{UW}$?

5. What is the length of $\overline{UV}$?

Answers

1. **2.** **3.** **4.** **5.**



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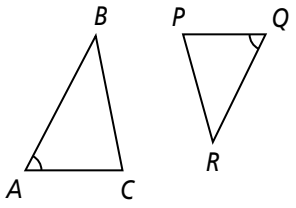
Standardized Test Prep

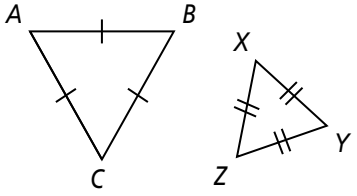
Proving Triangles Similar

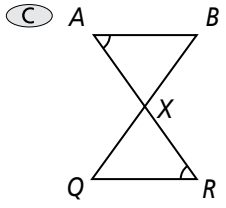
Multiple Choice

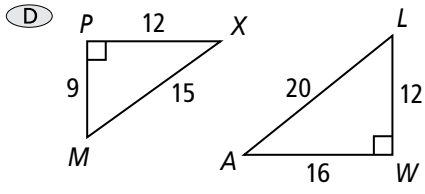
For Exercises 1–3, choose the correct letter.

1. Which pair of triangles can be proven similar by the AA ~ Postulate?

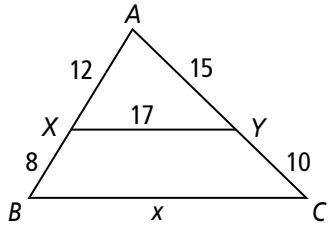
Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

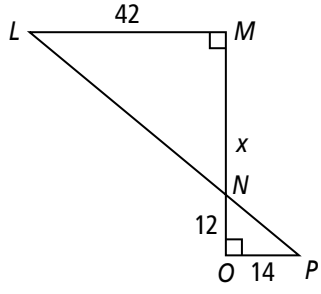
2. $\triangle AXY \sim \triangle ABC$. What is the value of x?



Ⓕ $10\frac{1}{5}$ Ⓗ $11\frac{1}{3}$

Ⓖ 19 Ⓘ $28\frac{1}{3}$

3. $\triangle LMN \sim \triangle PON$. What is the value of x?



Ⓐ 36 Ⓒ 25

Ⓑ 20 Ⓓ $28\frac{1}{3}$

Short Response

4. Irene places a mirror on the ground 24 ft from the base of an oak tree. She walks backward until she can see the top of the tree in the middle of the mirror. At that point, Irene's eyes are 5.5 ft above the ground, and her feet are 4 ft from the mirror. How tall is the oak tree? Explain.