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$\qquad$ Date $\qquad$

Use the figure for Exercises 1-14. $\triangle P Q S \sim \triangle R P S$. $m \angle Q=56^{\circ}, m \angle P R S=87^{\circ}, P Q=36, Q S=60$, and $R P=30$.
Find each measure.

1. $m \angle P R Q$
2. $m \angle Q P R$
3. $m \angle R P S$
4. $m \angle Q P S$
5. $m \angle S$
6. $P S$
7. $R S$
8. $Q R$


Decide whether each statement is correct.
9. $\triangle P S Q \sim \triangle R S P$
10. $\triangle P R S \sim \triangle Q P S$
11. $\triangle R P S \sim \triangle S Q P$
12. $\triangle S Q P \sim \triangle S P R$
13. $\triangle Q S P \sim \triangle R S P$
14. $\triangle S Q P \sim \triangle S P R$

In Exercises 15-22, $\triangle F A R \sim \triangle T E H$. Complete each statement.
15. $\frac{F R}{T H}=\frac{A F}{\square}$
16. $\frac{E H}{T E}=\frac{\square}{F A}$
17. $\frac{\square}{R A}=\frac{H T}{H E}$
18. $\angle A \cong \square$
19. $\angle T \cong$
20. $\angle H \cong \square$

21. $\triangle A R F \sim$
22. $\triangle E T H \sim$ $\square$
23. The sides of a triangle have lengths 5,6 , and 8 . A triangle similar to it has a side of length 10 . Write all side lengths of each possible similar triangle.
24. The sides of a triangle have lengths 12,18 , and 18. A triangle similar to it has a side of length 8 . Write all side lengths of each possible similar triangle.
25. A triangle has sides of length 5,7 , and 8 . A triangle similar to it has a perimeter of 15 . What are the lengths of the sides of this triangle?
26. A triangle has sides of length 9,12 , and 15 . A triangle similar to it has a perimeter of 40 . What are the lengths of the sides of this triangle?

Use the diagram for Exercises 27-29.
27. Figure $A B C D$ is a parallelogram. Prove that $\triangle A B F \sim \triangle D E F$.
28. Suppose $m \angle E=20^{\circ}$ and $m \angle C=60^{\circ}$.


Find the measure of each angle.
a. $\angle E B A$
b. $\angle A$
c. $\angle E D F$
29. Is $\triangle A B F \sim \triangle C E B$ ? Explain.

