Geometry Assessment

1. Complete the truth table.

p	q	$\sim p$	$\sim p \wedge q$
T		F	
T		F	
F		T	
F		T	

2. Write the negation, conjunction, and disjunction for the statement:

p: The polygon is a square. q: The polygon is a rectangle

Negation of p:

Conjunction:

Disjunction:

3. Write the converse, inverse, and contrapositive of the statement, then determine the truth value of each.

If a number is divisible by 2, then it is divisible by 4.

Converse:

Inverse:

Contrapositive:

4. What law can be used to determine that the conclusion is valid based on the given statements?

Given: If an angle is acute, then it cannot be obtuse. $\angle A$ is acute.

A. Law of Detachment
B. Law of Syllogism
C. Law of Converse

D. The conclusion is not valid.

Given: If a figure has 4 right angles, then the figure is a rectangle. A rectangle has 2 pairs of parallel sides.

A. Law of Detachment
B. Law of Syllogism
C. Law of Converse
D. The conclusion is not valid.

5. Find the value of y if B is between A and C, AB is $2y$, BC is $6y$, and AC is 48.

A. 384
B. 12
C. 6
D. 4

6. Find the distance between $P\ (2, 8)$ and $Q\ (5, 3)$.

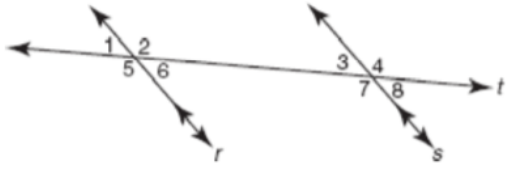
A. 9
B. $\sqrt{18}$
C. $\sqrt{34}$
D. 34

7. The midpoint of a line segment AB is $(1, 2)$. Point A coordinates are $(3, -3)$ and point B coordinates are $(x, 7)$. Find the value of x.

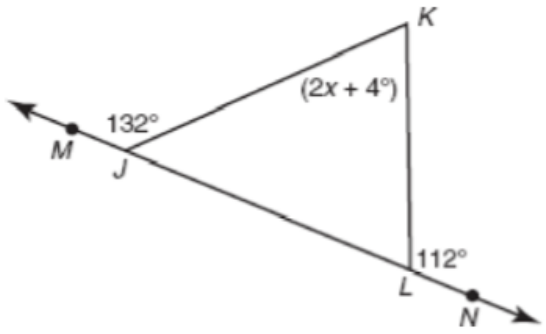
8. Determine whether the pair of lines are parallel, perpendicular, or neither.
   Line N: $y = -2x - 4$
   Line M: $y = \frac{1}{2}x + 8$

9. Use a 2–column proof to prove that $\angle 4 \cong \angle 5$.

Given: $r \parallel s$, t is a transversal



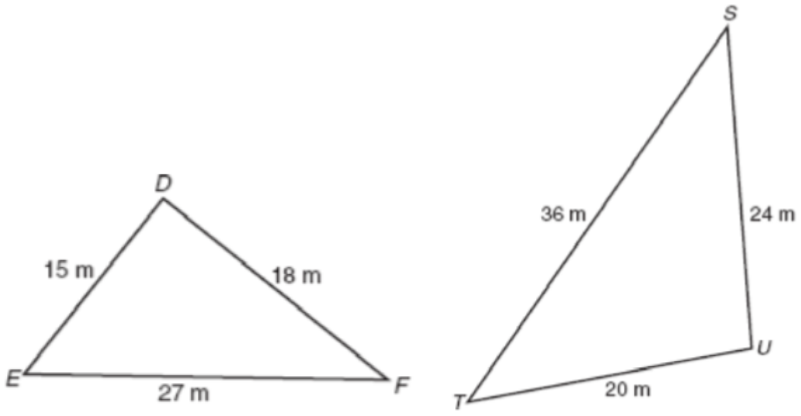
10. Solve for x.



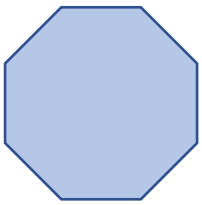
11. It is possible to form a triangle having the sides lengths, 3, 2.9, and 5? Show your work.

12. Steve is flying a kite on the beach. The string forms a 45° angle with the ground. If he has let out 16 meters of line, how high above the ground is the kite?

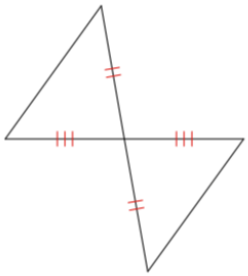
13. Determine whether the pair of triangles is similar and explain why.



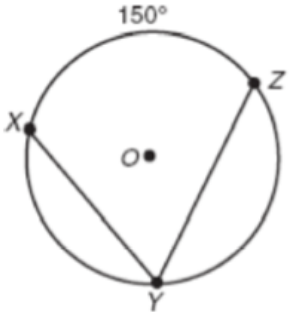
14. Calculate the measure of each interior angle of the regular polygon below.



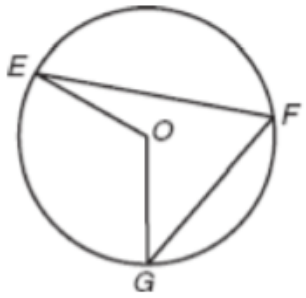
15. Are the triangles in the figure congruent? If so, state the theorem.



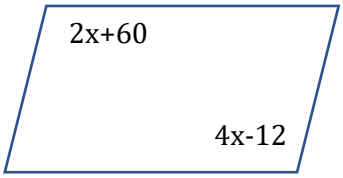
16. Determine the measure of the inscribed angle.



17. Determine the measure of $\angle EfG$ if the measure of $\angle EOG$ is 128°.



18. Find the value of *x* so that this quadrilateral is a parallelogram.



A. 12
B. 24
C. 36
D. 132

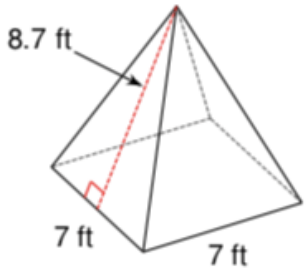
19. Polygon *ABCD* is similar to polygon *PQRS*. Which proportion **must** be true?

A. $\frac{AC}{AD} = \frac{PQ}{PS}$
B. $\frac{BC}{CD} = \frac{QR}{RS}$
C. $\frac{AB}{BD} = \frac{PQ}{QR}$
D. $\frac{CD}{AB} = \frac{PQ}{RS}$

20. Quadrilateral *ABCD* ~ quadrilateral *PQRS*. If *AB* = 10, *BC* = 6, *PS* = 12, and *QR* = 4, find the scale factor of *ABCD* to *PQRS*.

A. 1/2
B. 3/2
C. 5/3
D. 5/6

21. Find the surface area and volume of the following solids.





22. Jenna is building a fenced area for her dogs to play in when they are outside. She plans on fencing an area adjacent to her house using 73 feet of fencing. If she wants the length of the fenced area to be 1 foot longer than the width. What are the dimensions of the fenced area if the total area that she wants to fence in is 600 square feet?