

Pre-Test**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

Determine whether the given measures can be the lengths of the sides of a triangle. Write yes or no. Explain.

1. 9.2, 14.5, 17.1
 - a. No; the first side is not long enough.
 - b. No; the sum of the lengths of two sides is not greater than the third.
 - c. Yes; the sum of the lengths of any two sides is greater than the third.
 - d. Yes; the third side is the longest.

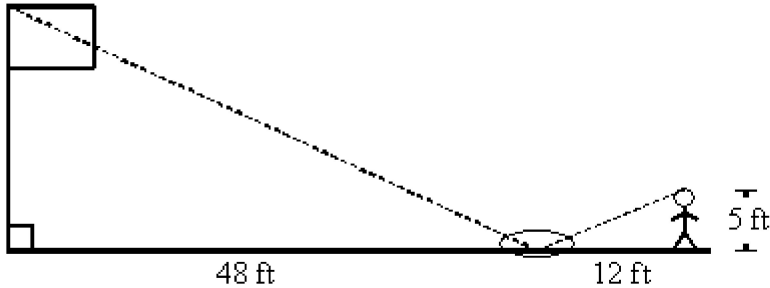
2. 3, 9, 10
 - a. No; the first side is not long enough.
 - b. No; the sum of the lengths of two sides is not greater than the third.
 - c. Yes; the third side is the longest.
 - d. Yes; the sum of the lengths of any two sides is greater than the third.

Write the inverse of the conditional statement. Determine whether the inverse is true or false. If it is false, find a counterexample.

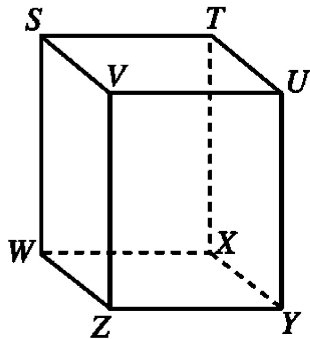
3. An equilateral triangle has three congruent sides.
 - a. A non-equilateral triangle does not have three congruent sides. True
 - b. A figure that has three non-congruent sides is not an equilateral triangle. True
 - c. A non-equilateral triangle has three congruent sides. False; an isosceles triangle has two congruent sides.
 - d. A figure with three congruent sides is an equilateral triangle. True

4. People who live in Texas live in the United States.
 - a. People who do not live in the United States do not live in Texas. True
 - b. People who do not live in Texas do not live in the United States. False; they could live in Oklahoma.
 - c. People who do not live in Texas live in the United States. True
 - d. People who live in the United States live in Texas. False; they could live in Oklahoma.

9. Michele wanted to measure the height of her school's flagpole. She placed a mirror on the ground 48 feet from the flagpole, then walked backwards until she was able to see the top of the pole in the mirror. Her eyes were 5 feet above the ground and she was 12 feet from the mirror. Using similar triangles, find the height of the flagpole to the nearest tenth of a foot.



- a. 55 ft b. 25 ft c. 20 ft d. 38.4 ft
10. What is the intersection of plane $TUYX$ and plane $VUYZ$?



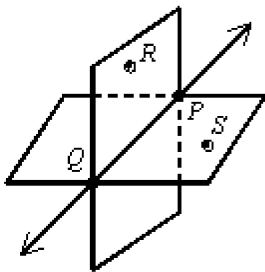
- a. \overleftrightarrow{VZ} b. \overleftrightarrow{UY} c. \overleftrightarrow{TX} d. \overleftrightarrow{SW}
11. Tell whether a triangle can have sides with lengths 3, 4, and 8.
- a. Yes b. No

Write the contrapositive of the conditional statement. Determine whether the contrapositive is true or false. If it is false, find a counterexample.

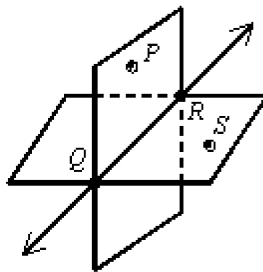
12. A converse statement is formed by exchanging the hypothesis and conclusion of the conditional.
 - a. A statement not formed by exchanging the hypothesis and conclusion of the conditional is not a converse statement. True
 - b. A statement not formed by exchanging the hypothesis and conclusion of the conditional is a converse statement. False; an inverse statement is not formed by exchanging the hypothesis and conclusion of the conditional.
 - c. A non-converse statement is not formed by exchanging the hypothesis and conclusion of the conditional. True
 - d. A non-converse statement is formed by exchanging the hypothesis and conclusion of the conditional. False; an inverse statement is formed by negating both the hypothesis and conclusion of the conditional.

13. Which diagram shows plane PQR and plane QRS intersecting only in \overleftrightarrow{QR} ?

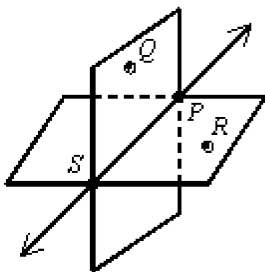
a.



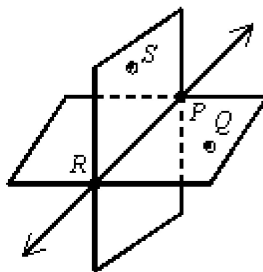
c.



b.



d.



Refer to Figure 1.

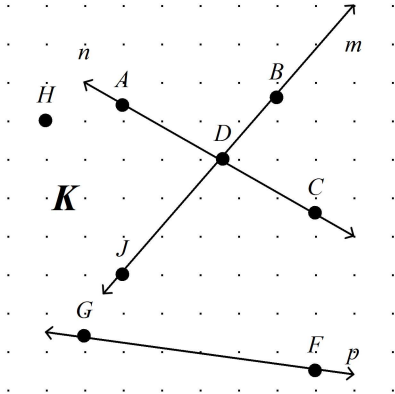


Figure 1

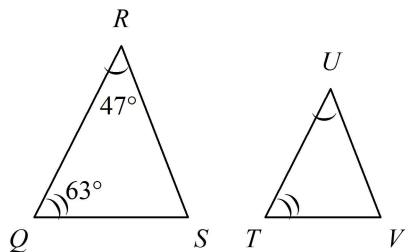
14. Name a point NOT contained in lines m , n , or p .
- | | |
|--------|--------|
| a. A | c. H |
| b. D | d. K |
15. Name the intersection of lines m and n .
- | | |
|------------------------------|--------|
| a. \overleftrightarrow{DC} | c. B |
| b. D | d. K |
16. Write the converse, inverse, and contrapositive of the conditional statement.
If an animal is a bird, then it has two eyes.
- Converse: If an animal does not have two eyes, then it is not a bird.
Inverse: If an animal is not a bird, then it does not have two eyes.
Contrapositive: If an animal has two eyes, then it is a bird.
 - Converse: All birds have two eyes.
Inverse: All animals have two eyes.
Contrapositive: All birds are animals, and animals have two eyes.
 - Converse: If an animal has two eyes, then it is a bird.
Inverse: If an animal is not a bird, then it does not have two eyes.
Contrapositive: If an animal does not have two eyes, then it is not a bird.
 - Converse: If an animal is not a bird, then it does not have two eyes.
Inverse: If an animal does not have two eyes, then it is not a bird.
Contrapositive: If an animal is a bird, then it has two eyes.

Name: _____

ID: A

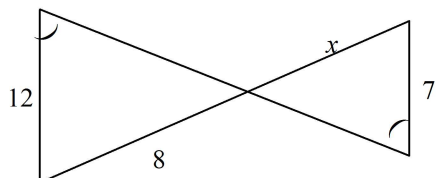
20. Tell whether a triangle can have sides with lengths 4, 2, and 7.

21. $\triangle QRS \sim \triangle TUV$. What is the measure of $\angle V$?



Explain why the triangles are similar. Then find the value of x .

22.



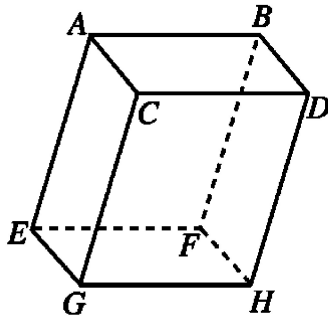
Not drawn to scale

23. What is the converse and the truth value of the converse of the following conditional?
If an angle is a right angle, then its measure is 90.

Name: _____

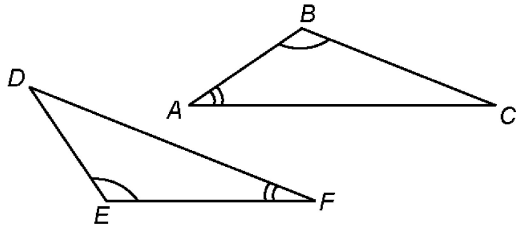
ID: A

24. Which plane is parallel to plane $EFHG$?



Determine whether each pair of triangles is similar. Justify your answer.

25.



**Pre-Test
Answer Section**

MULTIPLE CHOICE

1. C
2. D
3. A
4. B
5. C
6. A
7. A
8. C
9. C
10. B
11. B
12. A
13. C
14. C
15. B
16. C
17. B
18. B

SHORT ANSWER

19. $a = \frac{9}{2}$, $b = \frac{15}{2}$
20. No
21. 70°
22. AA Postulate; $4\frac{2}{3}$
23. If an angle has measure 90, then it is a right angle.
True
24. plane $ABDC$
25. yes; $\triangle EDF \sim \triangle BCA$ by AA Similarity