Zero The Math Hero
Standard Mathematical Elements - Lesson 6

Lesson 6 introduces the concept of a theorem. Two theorems related to triangles are:

- The Triangle Angle-Sum Theorem
- The Exterior Angle Theorem

Lesson 6 also models how to find angle measures for interior and exterior angles for a variety of triangles. Several examples are demonstrated, using algebra as a part of the problem solving process.

Zero the Math Hero – Lesson 6

Lesson 6 – Definitions

theorem - a true math fact that has been proven

exterior angle - the angle formed when one side of a triangle is extended

remote interior angles - the two interior angles farthest away from an exterior angle for a triangle

Lesson 6 – Theorems

Theorem 1 (The Triangle Angle-Sum Theorem) - The sum of the measures of the three interior angles for any triangle is equal to 180 degrees.

Theorem 2 (The Exterior Angle Theorem) - The measure of an exterior angle for any triangle is equal to the sum of its two remote interior angles.

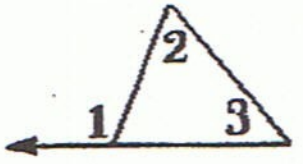
Name:_____

Date:_____

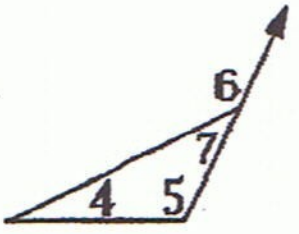
Lesson 6 - Practice Problems

Triangle Measures

1. Name an exterior angle in the figure. 1. _____



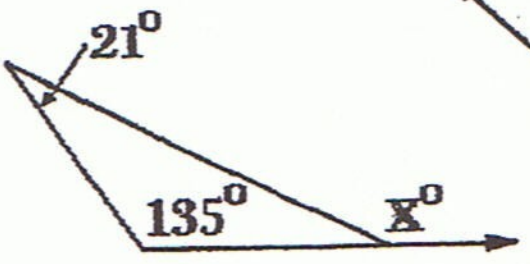
2. Name a remote interior angle in the figure. 2. _____



3. The sum of the 3 interior angles for any triangle always equals __2__ degrees. 3. _____

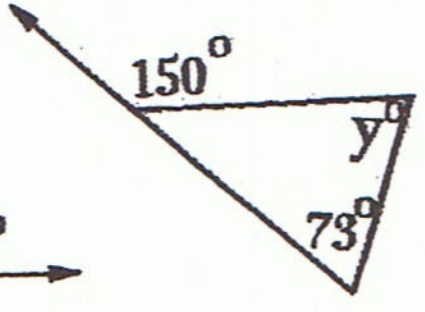
A. 150 B. 90 C. 180 D. 360

4. Find x.



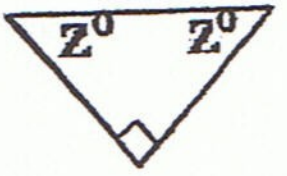
x = _____

5. Find y.



y = _____

6. Find z.



z = _____

Name:_____

Date:_____

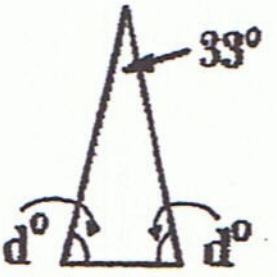
Lesson 6 - Practice Problems - Continued

Triangle Measures

7. Find c.

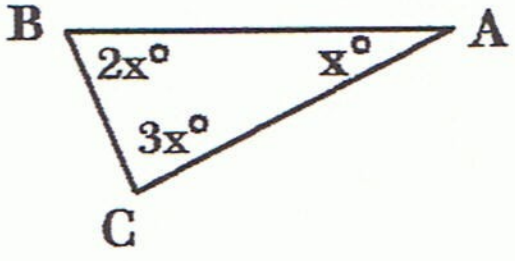
c = _____

8. Find d.



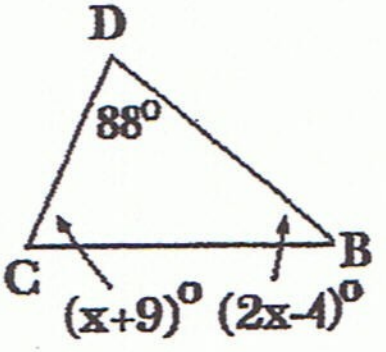
d = _____

9. Find m∠A.



m∠A = _____

10. Find m∠B.



m∠B = _____

Name: _____

Date: _____

Quiz - Definitions and Theorems

Zero the Math Hero – Lesson 6

Lesson 6 – Definitions

Directions: Fill in each blank with the letter that corresponds to the correct answer, A-E.

1. _____ the formula used to find the midpoint of a line segment on a graph
2. _____ the two interior angles farthest away from an exterior angle for a triangle
3. _____ the angle formed when one side of a triangle is extended
4. _____ a true math fact that has been proven
5. _____ the formula used to find the distance between two points on a graph

A. theorem

B. exterior angle

C. remote interior angles

D. distance formula

E. midpoint formula

Lesson 6 – Theorems

Directions: Each theorem is missing two words, indicated by "(?)". Use the letter choices beneath each theorem to indicate the correct missing words.

6. _____ The sum of the (?) of the three interior (?) for any triangle is equal to 180 degrees.

F. measures, segments **G.** angles, segments
H. exterior, angles **I.** measures, angles

7. _____ The measure of an (?) angle for any triangle is equal to the (?) of its two remote interior angles.

J. interior, equation **K.** exterior, sum
L. external, distance **M.** obtuse, origin

Name: ANSWER KEY

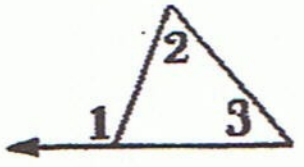
Date: _____

Lesson 6 - Practice Problems

Triangle Measures

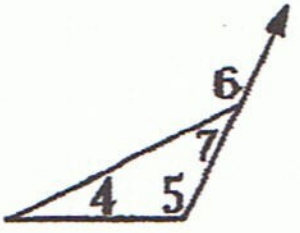
1. Name an exterior angle in the figure.

1. ∠1 (or angle 1)



2. Name a remote interior angle in the figure.

2. ∠4 or ∠5 (or angle 4 or angle 5)

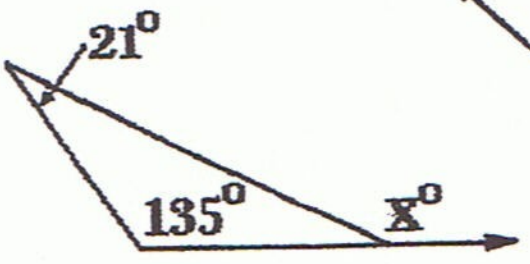


3. The sum of the 3 interior angles for any triangle always equals __2__ degrees.

A. 150 B. 90 C. 180 D. 360

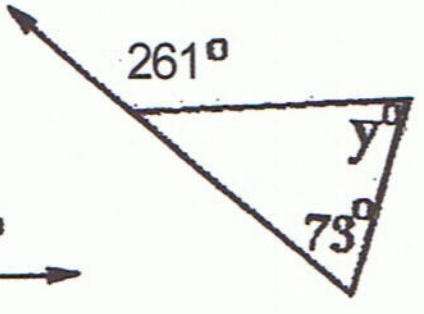
3. C (180)

4. Find x.



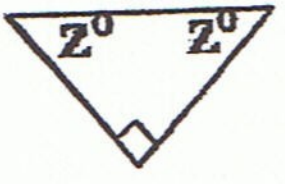
x = 156°

5. Find y



y = 77°

6. Find z.



z = 45°

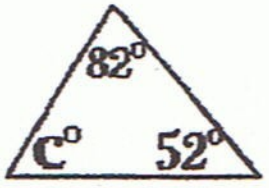
Name: ANSWER KEY

Date: _____

Lesson 6 - Practice Problems - Continued

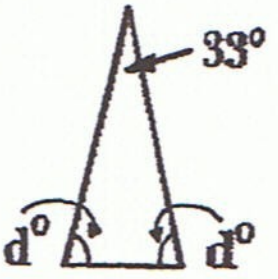
Triangle Measures

7. Find c.



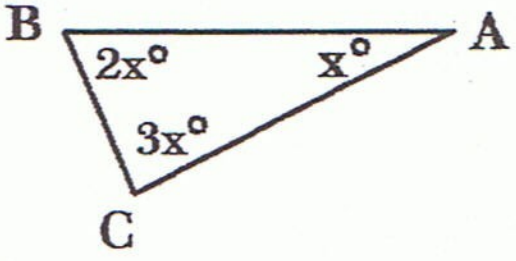
c = 46°

8. Find d.



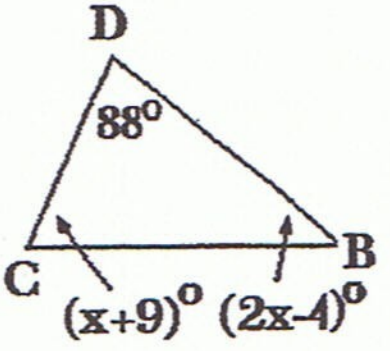
d = 73.5°

9. Find m∠A.



m∠A = 30°

10. Find m∠B.



m∠B = 54°

Name: ANSWER KEY

Date: _____

Quiz - Definitions and Theorems

Zero the Math Hero – Lesson 6

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1. E the formula used to find the midpoint of a line segment on a graph
2. C the two interior angles farthest away from an exterior angle for a triangle
3. B the angle formed when one side of a triangle is extended
4. A a true math fact that has been proven
5. D the formula used to find the distance between two points on a graph

A. theorem

B. exterior angle

C. remote interior angles

D. distance formula

E. midpoint formula

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H. exterior, angles **I.** measures, angles

7. K The measure of an (?) angle for any triangle is equal to the (?) of its two remote interior angles.

J. interior, equation **K.** exterior, sum
L. external, distance **M.** obtuse, origin