**Boston Public Schools**
**Mathematics End Chapter Examination**
**Geometry- Revised 11-07**
**Chapter 5- 5.1-5.5**

This examination is based on the mathematics that you have done in your math class. Please do all computation and scratch work on this examination. Choose the one best response for each multiple-choice question. Read all of the answer choices before making your selection. Please show all of your work on the open response questions.

**Diagrams on this test are not drawn to scale.**

Name: _____School:_____

1,C,10.G.1,Geometry,Bisectors-Medians-Altitudes,Identify,Glencoe Geometry,5.1,37

Answer selected was incorrect because student:
A. concluded the angle bisector was the perpendicular bisector.
B. concluded the angle bisector was the bisector of the opposite segment.
**C. Correct Response**
D. concluded the angle bisector was also the median.

1. The segment that bisects an angle of the triangle and has one endpoint at a vertex of the triangle and the other endpoint at another point on the triangle is called the _____.

A. perpendicular bisector B. segment bisector
C. angle bisector D. median

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2,A,10.G.2,Geometry,Indirect Proof,Compare Strategies,Glencoe Geometry,5.3,1

Answer selected was incorrect because student:
**A. Correct Response**
B. considered estimating 25% to be a strategy for solving an indirect proof.
C. failed to identify the process of working backwards to solve a problem.
D. failed to follow the text's directions in working with indirect proofs.

2. Which assumption would you make to start an indirect proof of the following statement? *The majority of students surveyed preferred chocolate ice cream to vanilla ice cream*.

A. The number of students surveyed that preferred vanilla ice cream to chocolate ice cream was greater than 50%.
B. The number of students surveyed that preferred vanilla ice cream to chocolate ice cream was greater than 25%.
C. The number of students surveyed that preferred chocolate ice cream to vanilla ice cream was greater than 50%.
D. The number of students surveyed that preferred chocolate ice cream to vanilla ice cream was greater than 25%.

3,D,10.G.4,Geometry,Relationships in Triangles,Determine the Proper Inequality Property,Glencoe Geometry,5.2,37

Answer selected was incorrect because student:
A. failed to identify the difference between transitive and division properties.
B. failed to identify the difference between transitive and addition properties.
C. failed to identify the difference between transitive property and comparing.
**D. Correct Response**

3. Name the property that justifies if $AB < BC$ and $BC < CD$, then $AB < CD$.

A. Division Property
B. Addition Property
C. Comparison Property
D. Transitive Property

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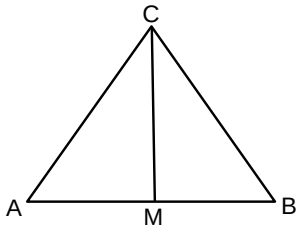
4,A,10.G.4,Geometry,Relationships in Triangles,Determine the Longest Measure in a Side-Angle Relationship,Glencoe Geometry,5.2,7

Answer selected was incorrect because student:
**A. Correct Response**
B. failed to consider that the longer segment is opposite the larger angle.
C. mixed the meaning of the greater than and less than symbols.
D. failed to identify the longest side.



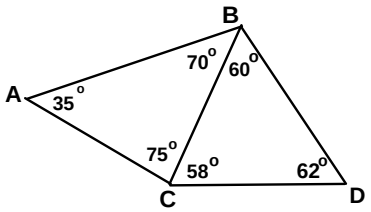

4. In the triangle above the following information is given:
- Side AC = Side BC = 31.
- $\angle$ ACM measures 38 degrees.
- $\angle$ BCM measures 42 degrees.

What is the relationship between *AM* and *BM*?

A. $\overline{AM} < \overline{BM}$
B. $\overline{AM} > \overline{BM}$
C. $\overline{AM} = \overline{BM}$
D. It cannot be determined with the information given.

5,B,10.G.4,Geometry,Relationships in Triangles,Determine the Longest Measure in a Side-Angle Relationship,Glencoe Geometry,5.2,27

Answer selected was incorrect because student:
A. failed to identify the longest side.
**B. Correct Response**
C. failed to identify the appropriate property.
D. identified the longest side of triangle BDC rather than triangle ABC.




5. Refer to the figure shown above. What is the longest segment?

A. $\overline{BD}$ B. $\overline{AB}$ C. $\overline{AC}$ D. $\overline{BC}$

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6,B,10.G.4,Geometry,Relationships in Triangles,Use the Triangle Inequality Theorem,Glencoe Geometry,5.5,13

Answer selected was incorrect because student:
A. did not consider the fact that the sum of the 2 sides must be > 16 inches.
**B. Correct Response**
C. considered this to be a possible answer but this is not the shortest possible answer.
D. concluded that all sides were congruent.

6. Using the diagram in Question 5, which statement below is true?
A. $AC > AB$ B. $AB > AC$ C. $BD > BC$ D. $CD < BD$

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7,D,10.G.5,Triangle Inequality,Determine Range of Third Side of a Triangle when Given the Measure of 2 Sides, Glencoe Geometry,5.4,13
Answer selected was incorrect because student:
A. failed to find the difference between the 2 given sides.
B. concluded the measure of the third side must be between the 2 given sides.
C. failed to find the sum of the 2 given sides.
**D. Correct Response**

7. If 15 and 20 are the lengths of two sides of a triangle, between what two numbers must the measure of the third side fall?

A. 10 and 35 B. 15 and 20 C. 10 and 25 D. 5 and 35

8. Which of the following groups of lengths ***could not*** be the measures of three sides of a triangle?

A. 13,4,13 B. 15, 16, 31 C. 18, 18, 18 D. 6, 8,10

8,B,10.G.1,Geometry,Triangles, Triangle Inequality Theorem,Glencoe Geometry,5.4,1

Student may have:
A. Failed to apply the triangle inequality theorem and failed to identify an isosceles triangle.
**B. Correctly applied the triangle inequality theorem and concluded the sum of any two sides of a ▲ must be greater than the third side.**
C. Failed to apply the triangle inequality theorem and failed to identify an equilateral triangle.
D. Failed to apply the triangle inequality theorem and failed to identify a simple right triangle.

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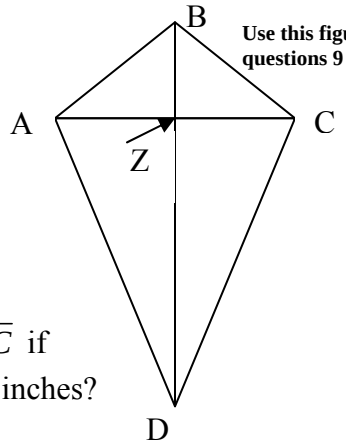
9,OR,10.G.1,Geometry,Bisectors-Medians-Altitudes,Find the Length,Glencoe Geometry,5.1,14

Lynn is designing a kite. Her current project is the construction of a large model of an ancient Chinese pattern.




**Use this figure for questions 9 and 10.**

9. If $\overline{BZ}$ is the median of ΔABC and BD ⊥ AC, what is the length of $\overline{AC}$ if $\overline{AZ} = 2x + 24$ inches and $\overline{CZ} = 5x - 30$ inches?

_____Ans.

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**ANSWER**

*If $\overline{AZ} = 2x + 24$ inches and $\overline{CZ} = 5x - 30$ inches; then $2x + 24 = 5x - 30$.*
*$3x = 54$; $x = 18$. $\overline{AZ} = 2(18) + 24$, $\overline{AZ} = 36 + 24$ $\overline{AZ} = 60$ inches.*
*$\overline{AZ} + \overline{CZ} = \overline{AC}$ $\overline{AC}$ =* ***120 inches***

10,OR,10.G.1,Geometry,Bisectors-Medians-Altitudes,Find the Measure of a Bisected Angle,Glencoe Geometry,5.1,13

10. Using the figure above. Suppose $\overline{AC} \cong \overline{CD}$ and $\overline{DZ}$ is the bisector of $\angle ADC$, find the value of $x$ if $m\angle ADZ = 4x - 7$ and the $m\angle CDZ = 2x + 11$.

_____Ans.

**ANSWER**

*Because* $\overline{DZ}$ is the bisector of $\angle ADC$ you can conclude that $m\angle ADZ = m\angle CDZ$.

$4x - 7 = 2x + 11$; $2x = 18$; ***x*= 9.**