Geometry Geopardy

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The fast-paced game shows on television are motivating and fun to watch as we try to match wits with the contestants. "Jeopardy" is one such game show. The unique characteristic of "Jeopardy" is that the contestants are given answers or clues in various categories, and they must respond by posing a question that corresponds to the item described in the clue.

The following activity is based on this popular game show except the questions are all related to geometry. It would be valuable to watch "Jeopardy" a few times to get the feel for the game. Quick thinking is vital in "Jeopardy" because the first person to hit his or her buzzer earns first chance at posing the right question. A correct response adds the dollar value of the item to the player's monetary total, but an incorrect response means the total is reduced by that amount. The more you know of the game "Jeopardy," the more fun Geopardy will be. You will be able to incorporate a Daily Double, Double Geopardy and Final Geopardy into the game which will make Geopardy appealing to the students. All you need to play Geopardy is a basic knowledge of "Jeopardy," an overhead projector, some transparencies and some small Post-it Notes to cover the questions.

Preparing for Geopardy

After watching "Jeopardy" a few times, you must choose your categories, prepare a set of clues and responses for each and decide how to incorporate the Daily Double, Double Geopardy and Final Geopardy into the game. Categories could simply be chapter titles, such as "parallel lines" or "congruent triangles," or more creative themes, such as "words beginning with C." Decide how many clues to have in each category, and try to rank the items from easiest to hardest. Label each clue with its point value, and prepare an answer sheet which will be in the form of questions. Figure 1 is an example of the clue sheet used for this activity.

Playing Geopardy

The clues for the following activity are based on Grades 7, 8 and 9 Journeys in Math series. You will only need transparencies of the game boards containing the clues (Games 1, 2 and 3), an overhead projector, Post-it Notes to cover the clues and a person to keep score. The objective of this activity is to review and reinforce geometrical concepts.

To use this activity in an average-sized classroom, the students should first be organized into four to six teams with each team occupying its own row of desks or seats. It is preferable but not essential that the teams be of equal size. It would be helpful to have one student assisting the teacher by keeping score. Before play begins, review the game rules with the students.

Before play begins, cover all clues on the game boards with small Post-it Notes. To begin play, randomly select one of the front-row students to select an item from the game board. If the student chooses "Definitions for 500," remove the Post-it Note for that item only. Once the clue has been revealed, the front-row students can compete for that item. The first one to raise his or her hand gets the first attempt at the correct question. Depending on the appropriateness of the student's response, the team's score will be increased or decreased by the amount of the item value. Once that item has been completed, the item should be left uncovered. For the second item, all students in the second rows will be the contestants and must choose a covered item and the game continues. Daily Double, Double Geopardy and Final Geopardy may be incorporated into the game in the same fashion as done in the television series.

Conclusion

Games can be fun, challenging and motivating. They also provide a change of pace and can involve all members of the class. Encourage the students to try to silently respond even when they are not active contestants. Most students will try to do this anyway to see if they can beat the others. The game moves fast enough to keep the students from tuning out. You may wish to photocopy the blank game board (Figure 1) and create your own categories and clues. You also may wish to create a game of

Geopardy with categories from algebra or any other concept. It provides an excellent means of review while holding the students' attention.

Possible Questions as Student Responses

Game 1

Lines and Angles

(100) What is the angle measurement of a right angle?
(200) What is the angle measurement of an acute angle?
(300) What are opposite angles?
(400) What are complementary (or adjacent) angles?
(500) What are alternate-interior angles?
(600) What is an exterior (or an obtuse) angle?

Definitions

(100) What is a square?
(200) What is the vertex?
(300) What is an angle bisector?
(400) What is a hexagon?
(500) What is perpendicular?
(600) What is 12?

Diagrams

(100) What is a right triangle?
(200) What is an isosceles triangle?
(300) What is a scalene triangle?
(400) What are congruent triangles?
(500) What is a reflex angle?
(600) What is a contained angle?

Game 2

Lines and Angles

(100) What is the angle measurement of a straight angle?
(200) What is 45 degrees?
(300) What is the angle measurement of an obtuse angle?
(400) What are supplementary angles?

(500) What are corresponding angles?
(600) What are co-interior angles?

Diagrams

(100) What is a cube?
(200) What is a parallelogram?
(300) What are parallel lines?
(400) What is a trapezoid?
(500) What is a rectangular pyramid?
(600) What is a rhombus?

Symbols

(100) What is pi?
(200) What is a segment?
(300) What is a line?
(400) What is perpendicular?
(500) What is congruent?
(600) What is the metric symbol?

Game 3

Diagrams

(100) What is the hypotenuse?
(200) What is 180 degrees?
(300) What is the radius?
(400) What is the median?
(500) What is an inscribed angle?
(600) What is the apothem?

Definitions

(100) What is a degree?
(200) What is a heptagon?
(300) What is a rhombus?
(400) What is a reflex angle?
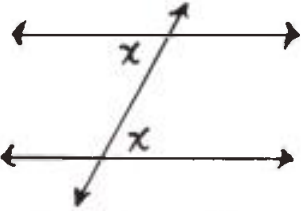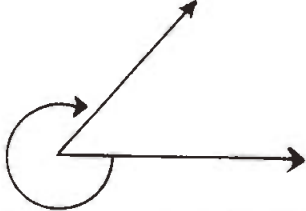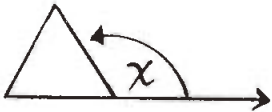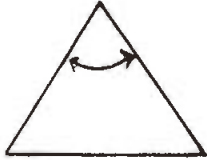(500) What is the centroid?
(600) What is the orthocentre?
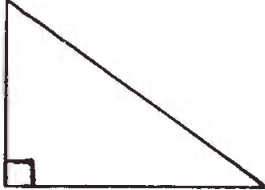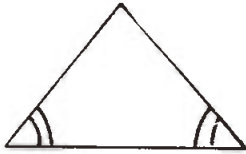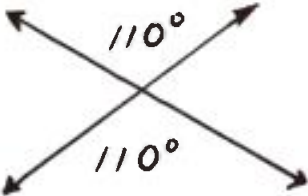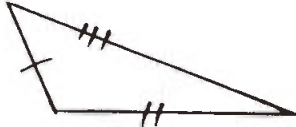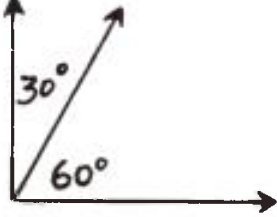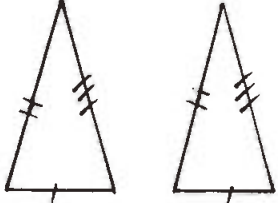
Formulas

(100) What is the formula for the area of a parallelogram?
(200) What is the formula for the circumference of a circle?
(300) What is the formula for the area of a triangle?
(400) What is the formula for the area of a circle?
(500) What is the formula for the area of a trapezoid?
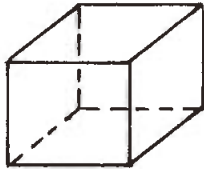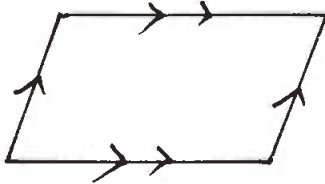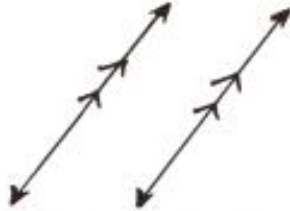(600) What is the formula for the volume of a cylinder?
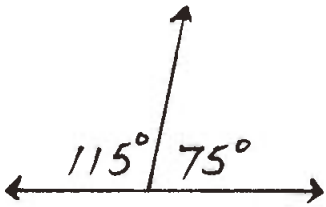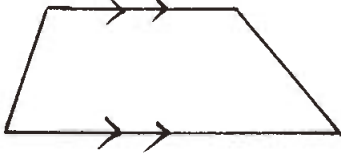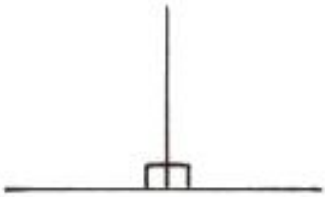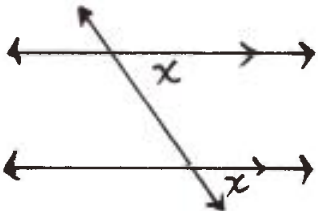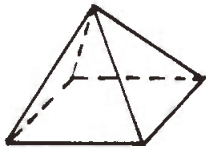
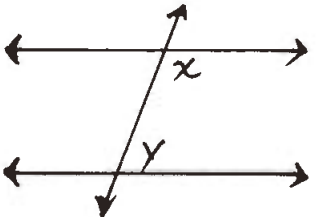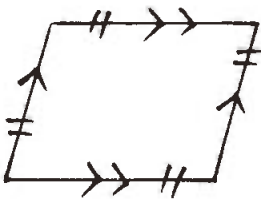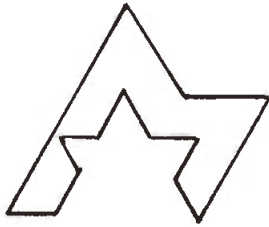Figure 1

Value			
100			
200			
300			
400			
500			
600			
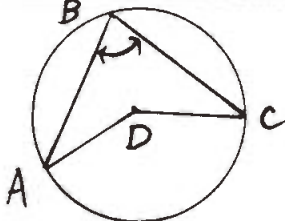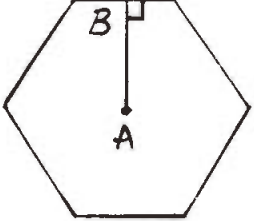
Game 1

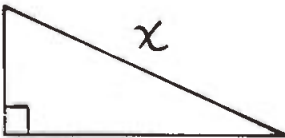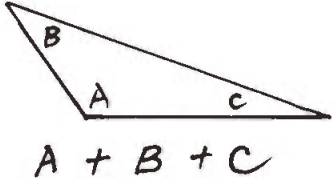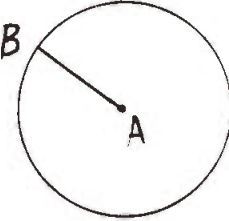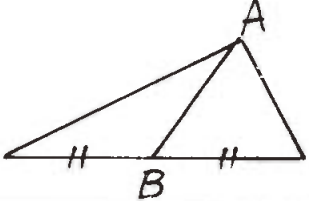| Value	Lines and Angles	Definitions	Diagrams
100	$90°$	a figure with 4 equal sides and 4 right angles	
200	$< 90°$	the point of intersection of the 2 rays of an angle	
300	$110°$ $110°$	cuts an angle into two equal parts	
400	$30°$ $60°$	the shape of a honeycomb	
500	x x	the relationship between north/south and east/west	
600	x	the number of sides of a dodecahedron	

Game 2

Value	Lines and Angles	Diagrams	Symbols
100	$180°$		π
200	degrees in a bisected right angle		$\overline{AB}$
300	$>90° <180°$		$\overset{\longleftrightarrow}{AB}$
400	$115°$ $75°$		
500	x x		
600	x y		

Game 3

Value	Diagrams	Definitions	Formulas
100		a unit of angle measure	bh
200	$A + B + C$	a polygon with 7 sides	$2\pi r$
300		parallelogram with 4 equal sides	$\dfrac{bh}{2}$
400		an angle between 180° and 360°	πr^2
500		point of intersection of 3 medians of a triangle	$\dfrac{h(a+b)}{2}$
600		point of intersection of 3 altitudes of a triangle	$\pi r^2 h$