

**Geometry**  
**Weekly Homework 10112019**

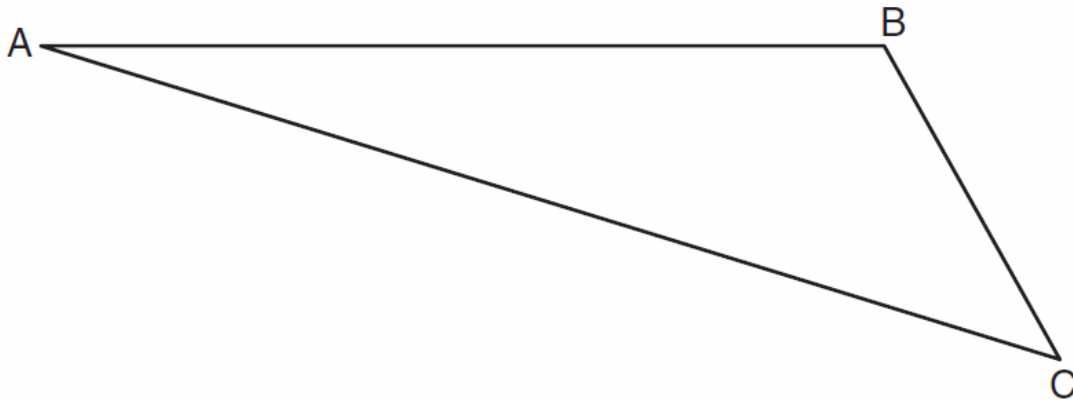
**Question 1.**

Given three distinct quadrilaterals, a square, a rectangle, and a rhombus, which quadrilaterals must have perpendicular diagonals?

- (1) the rhombus, only
- (2) the rectangle and the square
- (3) the rhombus and the square
- (4) the rectangle, the rhombus, and the square

**Question 2.**

On the diagram of  $\triangle ABC$  shown below, use a compass and straightedge to construct the perpendicular bisector of  $\overline{AC}$ . [Leave all construction marks.]



**Question 3.**

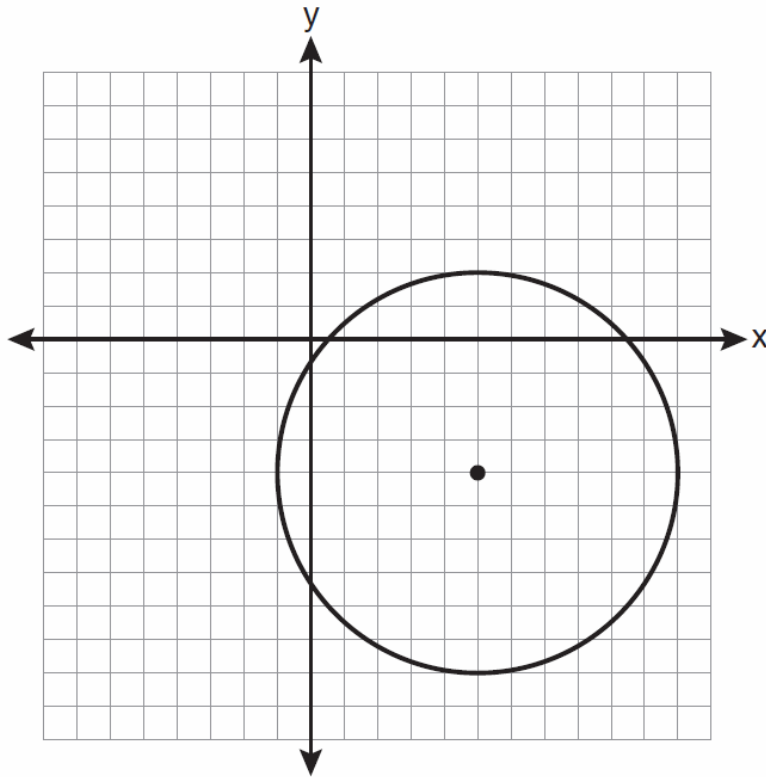
A sphere has a diameter of 18 meters. Find the volume of the sphere, in cubic meters, in terms of  $\pi$ .

**Question 4.**

Find an equation of the line passing through the point (5,4) and parallel to the line whose equation is  $2x + y = 3$ .

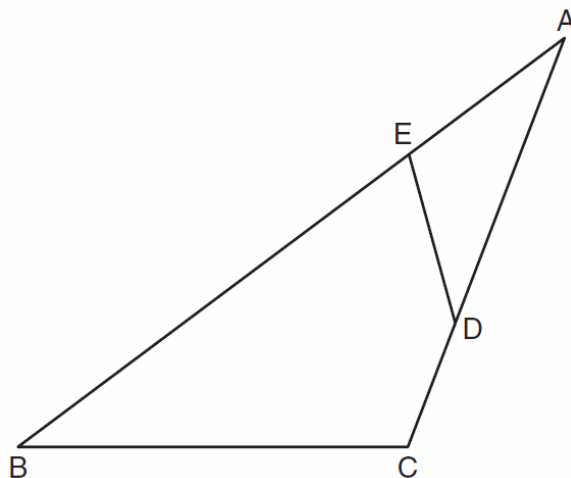
**Question 5.**

Write an equation of the circle graphed in the diagram below.



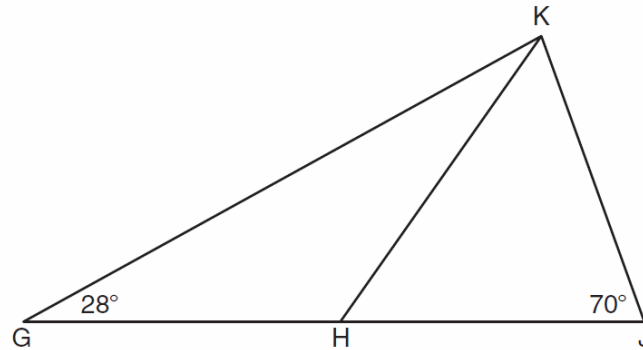
**Question 6.**

The diagram below shows  $\triangle ABC$ , with  $\overline{AEB}$ ,  $\overline{ADC}$ , and  $\angle ACB \cong \angle AED$ . Prove that  $\triangle ABC$  is similar to  $\triangle ADE$ .



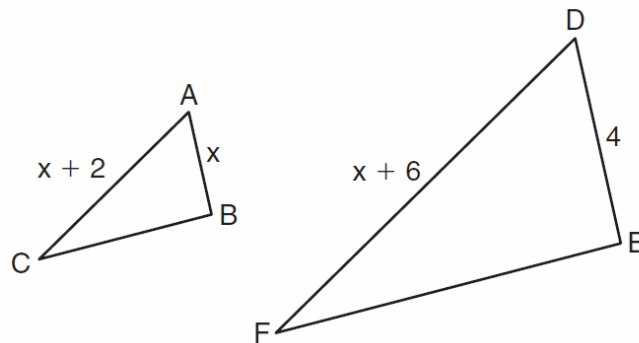
**Question 7.**

In the diagram below of  $\triangle GJK$ ,  $H$  is a point on  $\overline{GJ}$ ,  $\overline{HJ} \cong \overline{JK}$ ,  $m\angle G = 28$ , and  $m\angle GJK = 70$ . Determine whether  $\triangle GHK$  is an isosceles triangle and justify your answer.



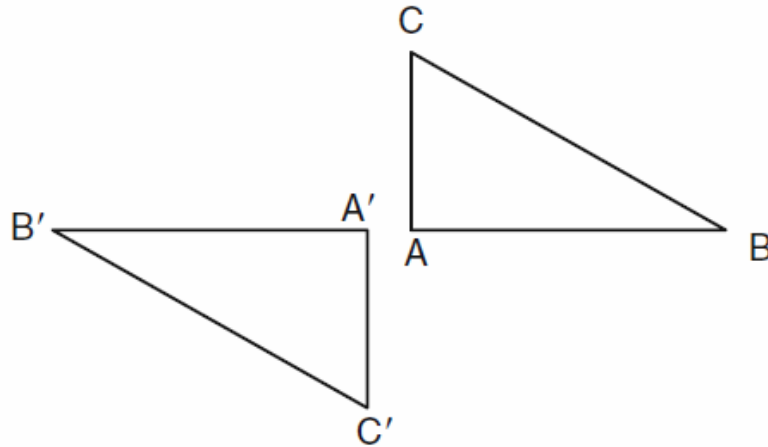
**Question 8.**

In the diagram below,  $\triangle ABC \sim \triangle DEF$ ,  $DE = 4$ ,  $AB = x$ ,  $AC = x + 2$ , and  $DF = x + 6$ . Determine the length of  $\overline{AB}$ . [Only an algebraic solution can receive full credit.]



**Question 9.**

In the diagram below, under which transformation will  $\triangle A'B'C'$  be the image of  $\triangle ABC$ ?



- (1) rotation
- (2) dilation
- (3) translation
- (4) glide reflection

**Question 10.**

The lateral faces of a regular pyramid are composed of

- (1) squares
- (2) rectangles
- (3) congruent right triangles
- (4) congruent isosceles triangles

**Question 11.**

Point  $A$  is located at  $(4, -7)$ . The point is reflected in the  $x$ -axis. Its image is located at

- (1)  $(-4, 7)$
- (2)  $(-4, -7)$
- (3)  $(4, 7)$
- (4)  $(7, -4)$

