Level A - Form 1 - Applied Mathematics: Geometry and Spatial Sense

Sample Question

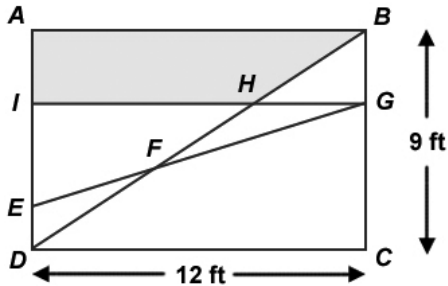Which figure is a triangle?

A

B

C

D

# Level A - Form 1 - Applied Mathematics: Geometry and Spatial Sense

The diagram shows a rectangle measuring 9 feet by 12 feet. Study the diagram. Then do Numbers 1 through 5.

1. What is the intersection of $\overline{DB}$ and $\overline{IG}$?

    A point F

    B $\overline{AD}$

    C $\overline{GB}$

    D point H

2. What is the sum of $\angle DAB$ and $\angle BCD$?

    F 90°

    G 180°

    H 360°

    J It is impossible to tell.

3. What is the length of $\overline{BD}$?

    A 21 feet

    B 12 feet

    C 15 feet

    D 25 feet

4. What kind of figure is the shaded area?

    F rectangle

    G trapezoid

    H square

    J parallelogram

5. Which two angles are congruent?

    A $\angle BHI$ and $\angle FHG$

    B $\angle BHG$ and $\angle FHG$

    C $\angle DFG$ and $\angle DHG$

    D $\angle FGC$ and $\angle FGB$

The graph shows figures on a coordinate grid. Study the graph. Then do Numbers 6 through 9.
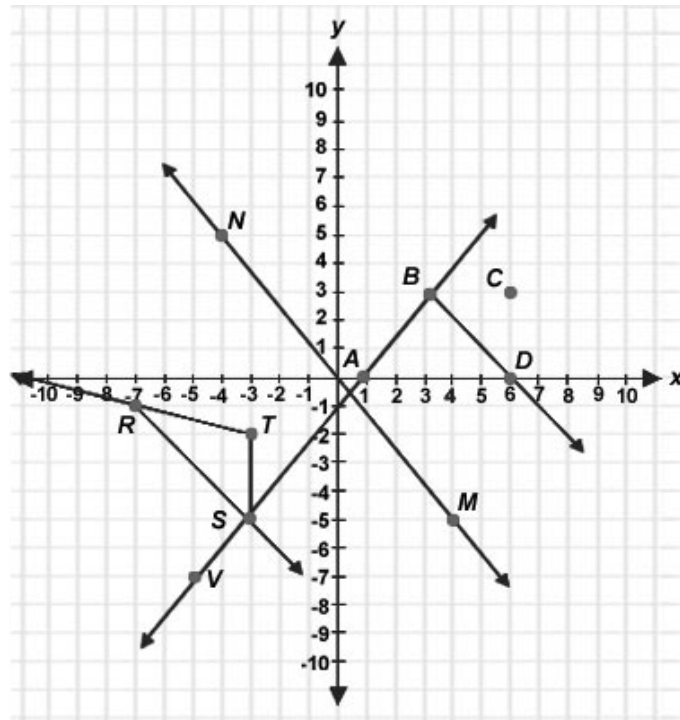
6. What are the coordinates of point *M*?

    F (5, ⁻4)

    G (⁻5, 4)

    H (4, ⁻5)

    J (⁻4, 5)

7. If triangle *RST* is translated 4 units to the right, what is the new location of point *T*?

    A (1, ⁻2)

    B (⁻2, 1)

    C (2, ⁻2)

    D (⁻2, 2)

8. Which figure would be formed by connecting the points *A*, *B*, *C*, and *D*?

    F parallelogram

    G trapezoid

    H rectangle

    J square

9. What is the correct way to describe the values of the coordinates on $\overline{SV}$?

    A *x* is positive and *y* is positive

    B *x* is positive and *y* is negative

    C *x* is negative and *y* is negative

    D *x* is negative and *y* is positive

The diagram shows a circle with several points labeled. Study the diagram. Then do Numbers 10 through 11.
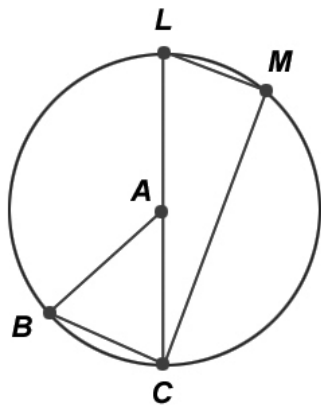
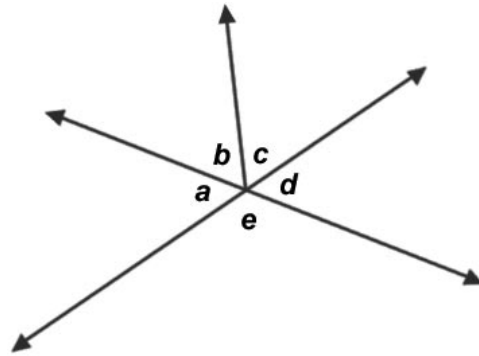

10. Which of these is a diameter of circle *A*?

F $\overline{AB}$

G $\overline{AC}$

H $\overline{LC}$

J $\overline{CM}$

11. Which of the following statements must be true?
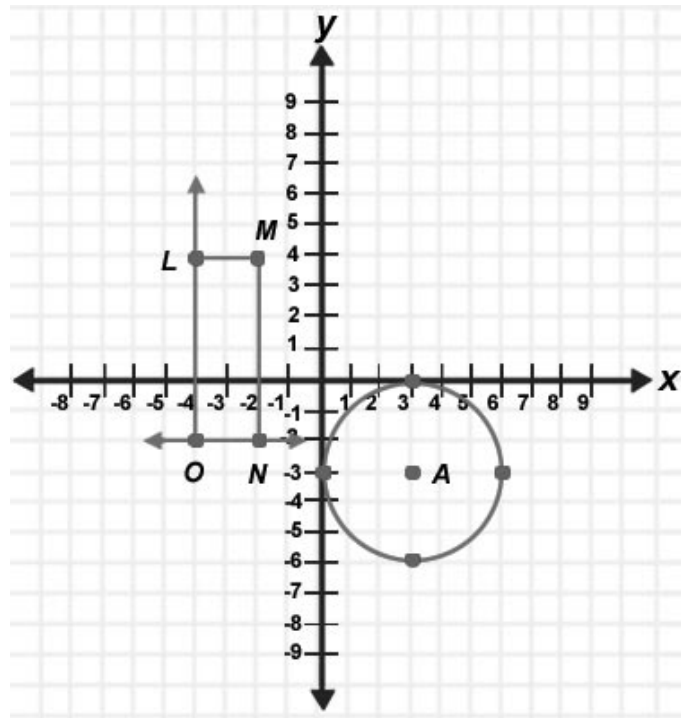
A $\overline{AB}$ is half the length of $\overline{CM}$.

B $\overline{BC}$ is the same length as $\overline{AC}$.

C $\overline{LC}$ is the same length as $\overline{MC}$.

D $\overline{AB}$ is half the length of $\overline{LC}$.

12. In the figure below, angles *b* and *c* are equal and angle *e* measures 110°. What is the measure of angle *d*?

F 70°

G 90°

H 55°

J 45°

The graph shows figures on a coordinate grid. Study the graph. Then do Numbers 13 through 17.

13. A segment connecting which two points would be a chord of the circle?

    A (3, 0) and (3, ⁻4)

    B (3, ⁻3) and (3, 0)

    C (0, ⁻3) and (4, ⁻3)

    D (3, 0) and (6, ⁻3)

14. Which of these segments lies on a line?

    F $\overline{LM}$

    G $\overline{MN}$

    H $\overline{ON}$

    J $\overline{OL}$

15. If rectangle *LMNO* is translated 2 units down, what would be the new coordinates of point *M*?

    A (0, 4)

    B (⁻2, ⁻2)

    C (⁻2, 2)

    D (⁻4, 4)

16. If the circle is reflected across the *y*-axis, what would be the new coordinates of the center, *A*?

    F (3, 3)

    G (⁻3, 3)

    H (⁻3, ⁻3)

    J (3, ⁻3)

17. Which of the following points lies inside rectangle *LMNO*?

    A (3, 3)

    B (⁻3, 0)

    C (0, ⁻3)

    D (⁻3, ⁻3)

18. Which of these is a ray?

F

G

H

J
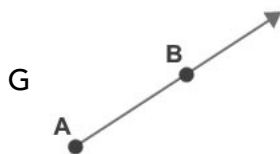
19. Which equation should you use to determine the length of leg *b* of a right triangle if the length of leg *a* is 4 inches and the length of the hypotenuse *c* is 7 inches?

A $b = \sqrt{4+7}$

B $b = \sqrt{7-4}$

C $b = \sqrt{49+16}$

D $b = \sqrt{49-16}$

20. A right triangle has a leg of 6 inches and a leg of 8 inches. What is the length of the hypotenuse?

F 48 inches

G 10 inches

H 50 inches

J 14 inches