

## Constructions Quiz

1. To construct the perpendicular bisector of a given line segment, you initially draw:
  - A. Two arcs from the endpoints
  - B. A straight line through the midpoint
  - C. A circle with the midpoint as the centre
  - D. Two arcs intersecting at the midpoint.
2. Which of the following angles can be constructed with a compass and straightedge?
  - A.  $50^\circ$
  - B.  $60^\circ$
  - C.  $75^\circ$
  - D. All of the above
3. To divide a line segment into a 4:5 ratio, you would:
  - A. Draw a ray at one endpoint at any angle
  - B. Mark 9 equal segments on the ray
  - C. Join the 9th division to the other end of the line segment
  - D. All of the above steps in order
4. When constructing an angle of  $45^\circ$ , which of the following angles do you first construct?
  - A.  $90^\circ$
  - B.  $60^\circ$
  - C.  $30^\circ$
  - D.  $22.5^\circ$
5. The process of constructing an angle congruent to a given angle involves:
  - A. Using a protractor to measure the angle
  - B. Copying the angle's side lengths
  - C. Drawing an arc with the compass and then copying the intercepted arc
  - D. Using a ruler to draw lines at the same lengths as the given angle
6. The sum of the lengths of any two sides of a triangle is:
  - A. Equal to the length of the third side
  - B. Less than the length of the third side
  - C. Greater than the length of the third side
  - D. Cannot be determined
7. What is necessary to construct the bisector of a line segment?
  - A. A compass and a ruler
  - B. A protractor
  - C. A ruler only
  - D. A pencil only
8. To construct a triangle given one side length and two angles, you need:
  - A. A compass, ruler, and protractor
  - B. A compass and ruler only
  - C. A protractor and ruler only
  - D. A pencil and paper only
9. Which of the following is not true about constructing triangles?

- A. If two sides and the included angle are given, the triangle can be constructed uniquely.
  - B. If two angles and a non-included side are given, the triangle can be constructed uniquely.
  - C. If three sides are given, the triangle can be constructed uniquely.
  - D. If two angles and the included side are given, the triangle can be constructed uniquely.
10. What is the first step in constructing an equilateral triangle?
- A. Drawing a circle
  - B. Drawing a line segment
  - C. Drawing an angle
  - D. Choosing a point
11. When constructing similar triangles, it is important to ensure that:
- A. Corresponding angles are congruent
  - B. Corresponding sides are proportional
  - C. Both A and B
  - D. The triangles are congruent
12. To construct a tangent to a circle from a point outside it, you must:
- A. Draw a line intersecting the circle at two points
  - B. Draw a line from the point to the center of the circle
  - C. Use the compass to draw two arcs that intersect at the tangent point
  - D. None of the above
13. The perpendicular from the vertex of the right angle to the hypotenuse of a right-angled triangle divides the triangle into:
- A. Two triangles with equal areas
  - B. Two congruent triangles
  - C. Two similar triangles
  - D. A triangle and a trapezoid
14. In a triangle, if a line divides two sides in the same ratio, it is:
- A. The median of the triangle
  - B. The altitude of the triangle
  - C. The bisector of the angle opposite to the longest side
  - D. Parallel to the third side
15. When constructing a  $30^\circ$  angle, you could first construct a  $60^\circ$  angle and then:
- A. Bisect it
  - B. Triple it
  - C. Make an angle adjacent to it
  - D. Measure it with a protractor
16. Which of these is a step in constructing a rhombus given one diagonal and one side?
- A. Constructing perpendicular bisectors at each end of the diagonal
  - B. Drawing a circle with the diagonal as diameter
  - C. Drawing equal arcs from each end of the diagonal
  - D. Measuring the side length with a ruler
17. To construct a square, you need to:

- A. Draw four equal line segments with a ruler
- B. Construct four right angles
- C. Both A and B
- D. None of the above

18. If you are given two non-parallel lines, how many points can be found that are equidistant from both lines?

- A. None
- B. One
- C. Two
- D. Infinitely many

19. The locus of a point that moves so that it is always equidistant from two given points is:

- A. A straight line
- B. A segment of a line
- C. A circle
- D. The perpendicular bisector of the segment connecting the two points

20. To construct an angle of  $105^\circ$ , you would:

- A. Construct a  $90^\circ$  angle and a  $15^\circ$  angle and combine them
- B. Construct a  $60^\circ$  angle and a  $45^\circ$  angle and combine them
- C. Bisect a  $210^\circ$  angle
- D. None of the above

#### Constructions Quiz Answer Key

- 1. A
- 2. D
- 3. D
- 4. A
- 5. C
- 6. C
- 7. A
- 8. B
- 9. B
- 10. B
- 11. C
- 12. C
- 13. C
- 14. D
- 15. A
- 16. C
- 17. C
- 18. C
- 19. D
- 20. B

Next, we can move on to the quiz for "Areas Related to Circles." Since it's quite extensive, I'll provide it upon your request to ensure the current content is reviewed and accepted.