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°

B. 60°

C. 75°

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°, which of the following angles do you first construct?

A. 90°

B. 60°

C. 30°

D. 22.5°

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° angle, you could first construct a 60° 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°, you would:

A. Construct a 90° angle and a 15° angle and combine them

B. Construct a 60° angle and a 45° angle and combine them

C. Bisect a 210° 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.