



Constructions

Name _____

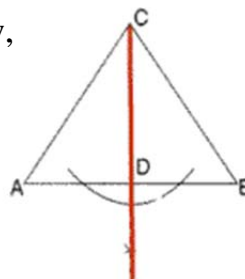
1. When finished with the construction for "Copy an Angle", segments are drawn connecting where the arcs cross the sides of the angles. What method proves these two triangles to be congruent?

- [1] ASA [2] ASA [3] SSS [4] AAS

1. _____

2. According to the construction shown in the diagram below, what do we call segment \overline{CD} ?

- [1] bisector of angle C
 [2] median to side \overline{AB}
 [3] perpendicular bisector of segment \overline{AB}
 [4] altitude to side \overline{AB}



2. _____

3. The point where the medians of a triangle are concurrent is called the

- [1] centroid [2] orthocenter [3] incenter [4] circumcenter

3. _____

4. The centroid of a triangle divides the medians into ratios of

- [1] 2:1 [2] 3:1 [3] 4:1 [4] 5:1

4. _____

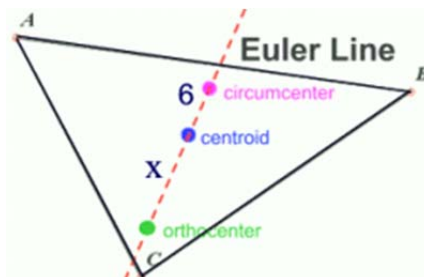
5. The circumcenter of an acute triangle is located inside the triangle. The circumcenter of an obtuse triangle is located outside the triangle. Where is the circumcenter of a **right** triangle located in relation to the triangle?

- [1] on the triangle [3] inside the triangle
 [2] outside the triangle [4] the location varies

5. _____

6. Scalene triangle ABC is shown at the right. The distance from the centroid of a triangle to the circumcenter is 6 units. How far is the centroid from the orthocenter?

- [1] 8 [2] 12 [3] 16 [4] 24



6. _____

7. You are looking at a triangle where the orthocenter, the centroid and the circumcenter are all the same point. What type of triangle are you looking at?

- [1] scalene [2] isosceles [3] equilateral [4] right

7. _____

8. When constructing the bisector of a line segment, you are also constructing the perpendicular bisector of the segment. [1] TRUE [2] FALSE

8. _____

9. When constructing a line parallel to a given line, you will be
 [1] copying a segment. [3] copying an angle.
 [2] bisecting a segment. [4] constructing a perpendicular
10. The orthocenter of a triangle is always located inside the triangle.
 [1] TRUE [2] FALSE
11. It is possible to inscribe a circle in any shaped quadrilateral.
 [1] TRUE [2] FALSE
12. The point of concurrence of the angle bisectors of a triangle is always located inside the triangle. [1] TRUE [2] FALSE
13. The point of concurrence of the perpendicular bisectors of a triangle is always located inside the triangle. [1] TRUE [2] FALSE
14. One method of constructing an equilateral triangle is to simply construct a triangle using the same segment for each side. [1] TRUE [2] FALSE
15. In relation to constructions, a straightedge is
 [1] a clear plastic device devoid of markings.
 [2] often shaped like a triangle.
 [3] used for drawing straight lines or segments, but not for measuring.
 [4] all of the above.
16. You are asked to "construct" an angle whose measure is 30° . Which of the following methods would be considered an acceptable construction?
 [1] Using a protractor, draw an angle of 30° .
 [2] Using a compass and straightedge, construct an equilateral triangle and then bisect one of its angles.
 [3] Using a compass and straightedge, copy an angle that appears to be close to 30° from a diagram in your textbook.
 [4] Using a compass and straightedge, construct two parallel lines and label one of the angles 30° .
17. The centroid of a triangle is located 12 units from one of the vertices of a triangle. Find the length of the median of the triangle drawn from that same vertex.
 [1] 16 [2] 18 [3] 24 [4] 36

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

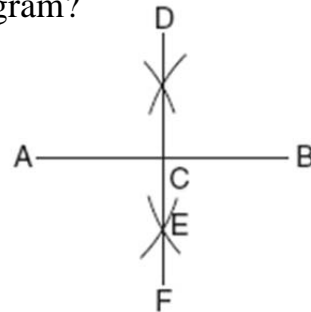
15. _____

16. _____

17. _____

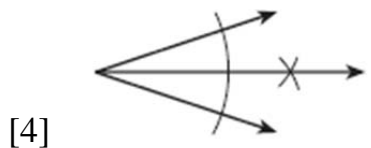
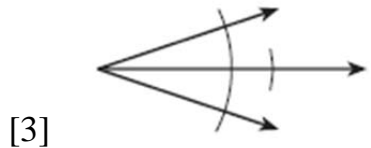
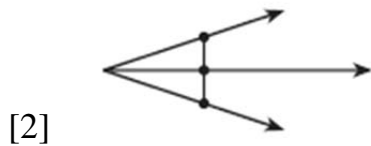
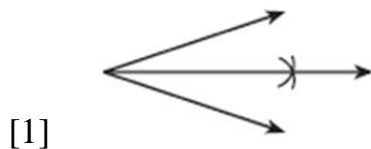
18. Which construction is shown in the accompanying diagram?

- [1] the bisector of $\angle ACD$
- [2] the midpoint of \overline{DF}
- [3] the perpendicular bisector of \overline{AB}
- [4] a perpendicular line to \overline{AB} from point D



18. _____

19. Which diagram below shows a correct mathematical construction using only a compass and a straightedge to bisect an angle?



19. _____

20. When given a square, the construction of an angle bisector at any vertex will create the diagonal of the square.

- [1] TRUE
- [2] FALSE

20. _____