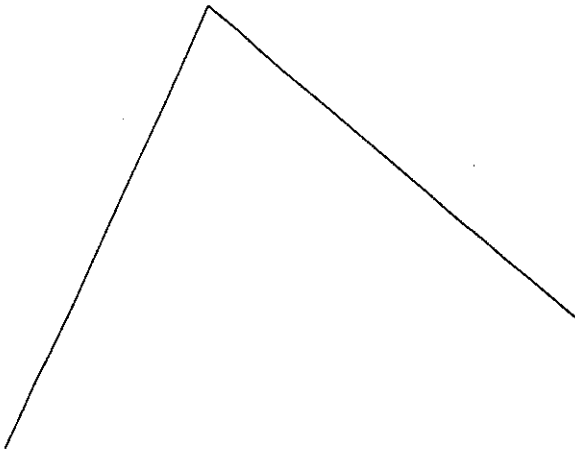


Constructions Midterm Review

Construct the bisector of each angle.

1)



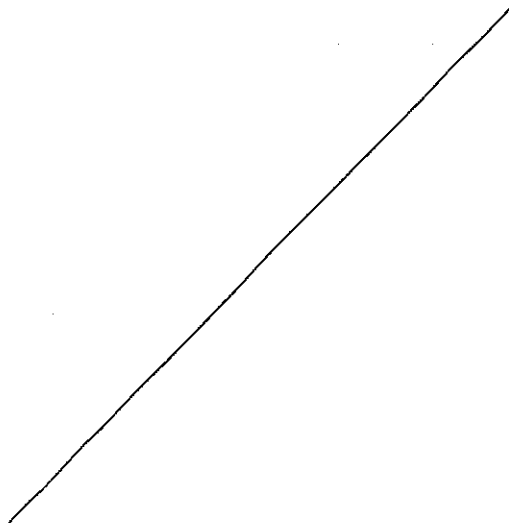
For each triangle, construct the angle bisector of angle A.

2)

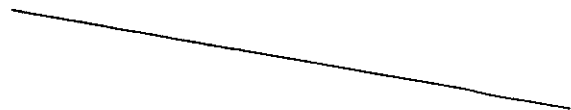


Construct the perpendicular bisector of each.

3)

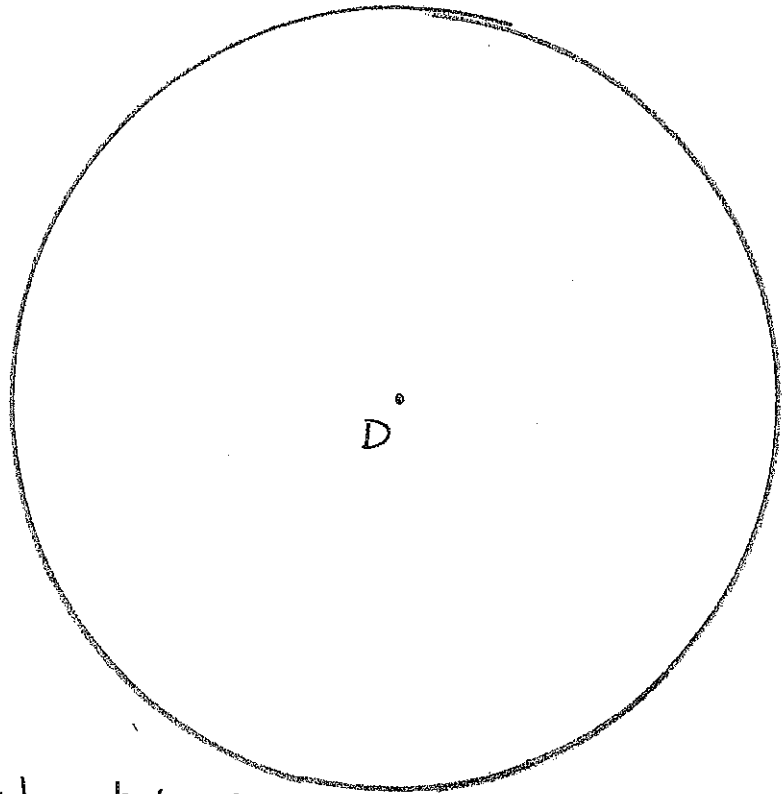
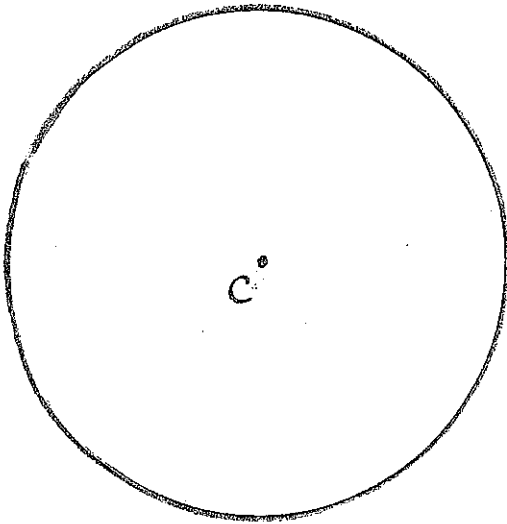


4)

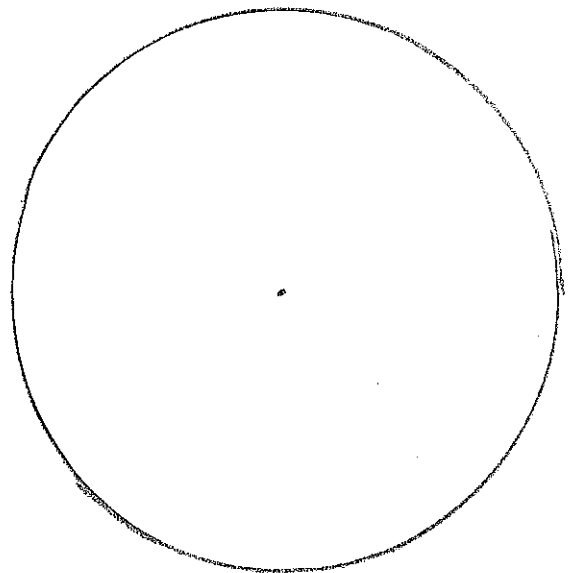
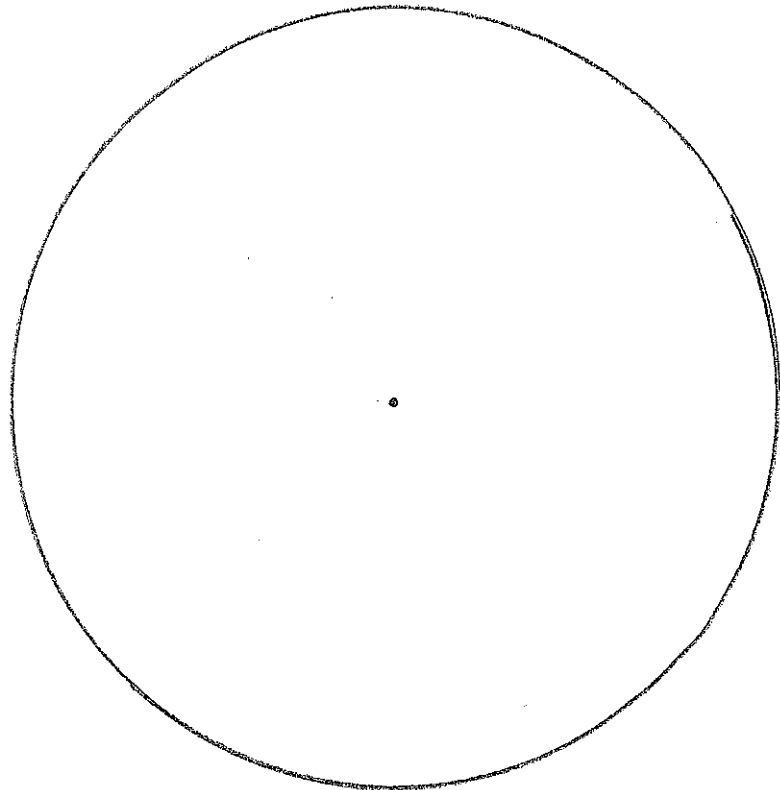


Construct a Hexagon

5) $\odot C$

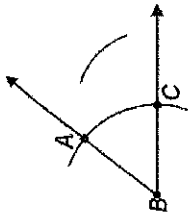


6) Construct an equilateral triangle.



7.

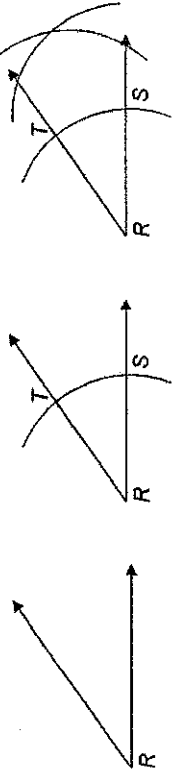
Juanita is trying to construct the angle bisector of $\angle B$. She placed the compass at point B and drew an arc that intersected both sides of the angle. She then labeled the intersections A and C . Juanita then placed her compass at point C and drew an arc. What should be Juanita's next step?



- A Juanita should use her straightedge and draw a line from point B to the intersection of the two arcs.
- B Juanita should place the compass at the intersection of the two arcs and use the same compass setting to draw another arc.
- C Juanita should place the compass at point B and use the same compass setting to draw another arc.
- D Juanita should place the compass at point A and use the same compass setting to draw another arc.

8.

What is the construction that is being performed below?



- A perpendicular bisector
- B angle bisector
- C construction of an isosceles triangle
- D construction of a right triangle

9.

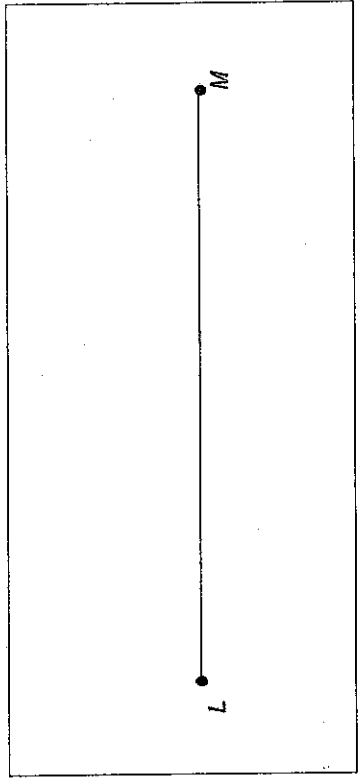
What construction is being described below?

- Step 1: Center a compass on endpoint A of \overline{AB} , setting the compass so that it is greater than half the length of the segment.
- Step 2: Draw a semicircle that intersects \overline{AB} .
- Step 3: Center the compass endpoint B of \overline{AB} with the same setting as in step 1.
- Step 4: Draw a semicircle that intersects \overline{AB} .
- Step 5: Use a straightedge to connect the points of intersection of the arcs.

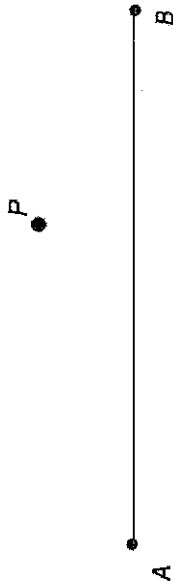
- A construction of congruent segments
- B construction of perpendicular bisector
- C construction of parallel lines
- D construction of a triangle

10.

In the space below, construct the midpoint of line segment \overline{LM} using only a compass and straightedge. Show all construction marks.

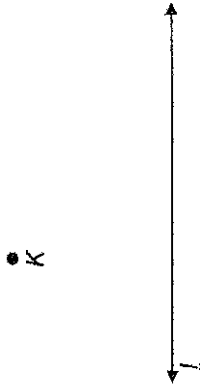


11. Which of the following represents the first step in constructing a line segment perpendicular to line segment AB that passes through the point P , as shown below?



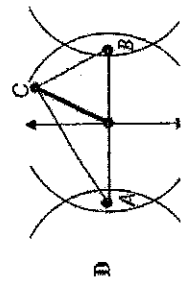
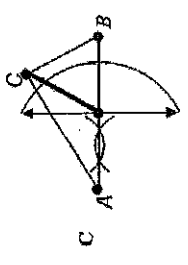
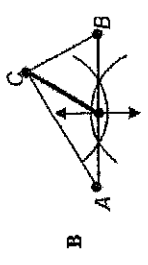
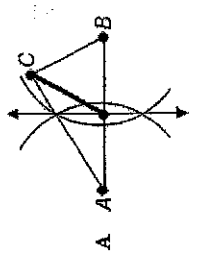
- A Set the compass point on one of the endpoints of the line segment and draw an arc above the segment.
- B Set the compass point on one of the endpoints of the line segment and draw an arc below the segment.
- C Set the compass point at P , and draw an arc below the point that intersects line segment AB in two locations.
- D Set the compass point in the middle of line segment AB , and draw an arc below the point P that intersects line segment AB in two locations.

12. Which of the following describes the construction of a line perpendicular to the given line l through the given point K ?

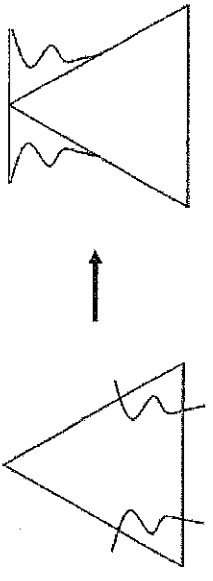


- A Use a straightedge to draw a line that intersects line l . Measure the intersection with a protractor to make sure that it is 90° .
- B Center a compass on point K . Draw an arc that intersects line l at two points. Use a straightedge to connect one of the intersections to point K . Use a protractor to make sure that it is 90° .
- C Center a compass on point K . Draw arc 1, which intersects line l at one point. Center the compass at the intersection and draw arc 2, which intersects arc 1. Use a straightedge to connect the point of intersection of arcs 1 and 2 and point K .
- D Center a compass on point K . Draw arc 1, which intersects line l at two points. Center the compass at one of the intersections and draw arc 2, which is below line l , and repeat this step with the same compass setting using the other intersection, which makes arc 3 such that it intersects arc 2. Use a straightedge to connect the point of intersection of arcs 2 and 3 and point K .

13. Which of the following shows the correct construction of a median of $\triangle ABC$?

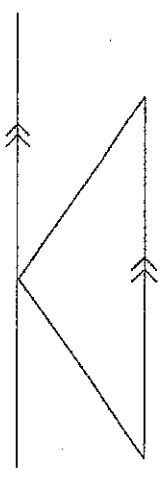


14. Which of the following is being proven below?



- A Linear pairs of angles are supplementary.
- B All triangles contain three acute angles.
- C The sum of the measures of the angles in a triangle is 90° .
- D The sum of the measures of the angles in a triangle is 180° .

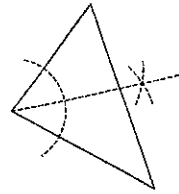
15. Which of the following theorems can be used to help prove that the sum of the angles in a triangle is 180° ?



- A If parallel lines are cut by a transversal, then alternate interior angles are congruent.
- B If parallel lines are cut by a transversal, then corresponding angles are congruent.
- C If parallel lines are cut by a transversal, then alternate exterior angles are congruent.
- D Vertical angles are congruent.

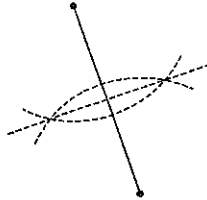
Name: _____ Date: _____

16. Using the diagram, identify the dashed line segment.



- A. median
- B. altitude
- C. angle bisector
- D. perpendicular bisector

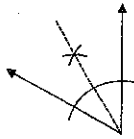
17. Using the diagram, identify the dashed line segment.



- A. median
- B. altitude
- C. angle bisector
- D. perpendicular bisector

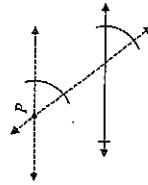
18. The drawing shows how to—

- A. construct a perpendicular bisector
- B. draw complementary angles
- C. bisect an angle
- D. inscribe an angle

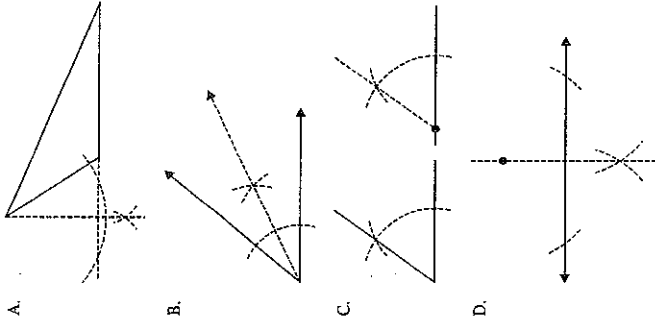


19. The drawing shows how to—

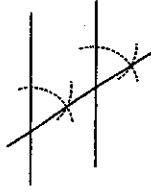
- A. construct a parallel line through a given point
- B. draw a perpendicular bisector
- C. copy a segment
- D. bisect an angle



20. Which of the following figures shows the construction of an angle bisector?

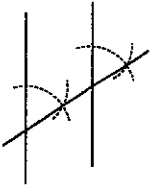


21. Which statement is illustrated by the following construction?



- A. Through a point not on a given line, exactly one line can be drawn perpendicular to the given line.
- B. If two lines cut by a transversal form congruent alternate interior angles, then the two lines are parallel.
- C. If two lines cut by a transversal form congruent corresponding angles, then the two lines are parallel.
- D. If two lines cut by a transversal form same side interior angles that are supplementary, then the two lines are parallel.

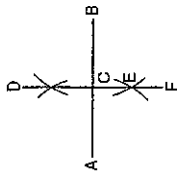
22. Which statement is illustrated in the construction sketched here?



- A. Through a point not on a given line, exactly one line can be drawn perpendicular to the given line.
- B. If two lines cut by a transversal form congruent alternate interior angles, then the two lines are parallel.
- C. If two lines cut by a transversal form congruent corresponding angles, then the two lines are parallel.
- D. If two lines cut by a transversal form same side interior angles that are supplementary, then the two lines are parallel.

23. _____

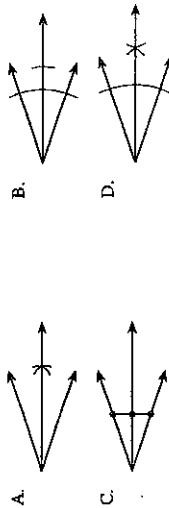
23. Which construction is shown in the accompanying diagram?



- A. the bisector of $\angle ACD$
- B. the midpoint of \overline{DF}
- C. the perpendicular bisector of \overline{AB}
- D. a perpendicular line to \overline{AB} from point D

24. _____

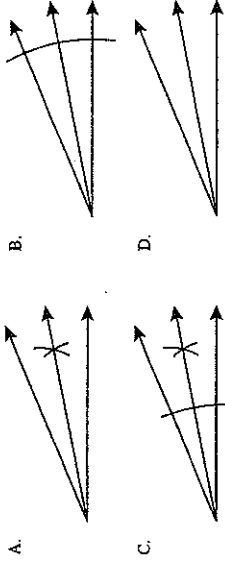
24. Which diagram shows a correct mathematical construction using only a compass and a straightedge to bisect an angle?



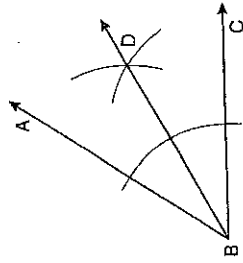
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Constructions Midterm Review

25. Which illustration shows the correct construction of an angle bisector?



26. Based on the construction below, which statement must be true?



- A. $m\angle ABD = \frac{1}{2}m\angle CBD$
- B. $m\angle ABD = m\angle CBD$
- C. $m\angle ABD = m\angle ABC$
- D. $m\angle CBD = \frac{1}{2}m\angle ABD$

25. _____

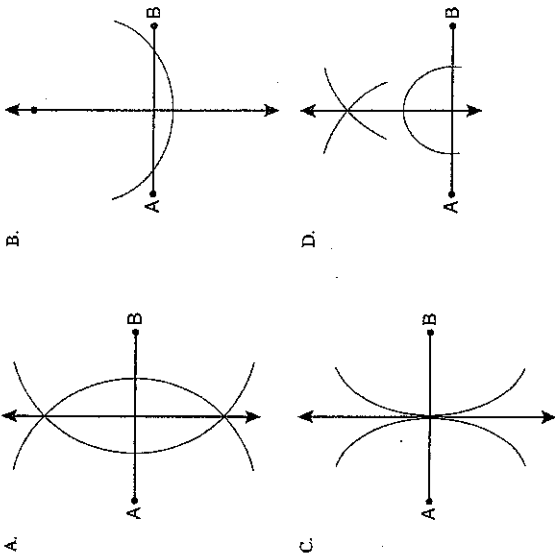
26. _____

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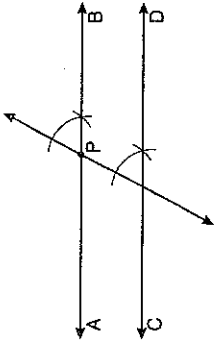
27.

Which diagram shows the construction of the perpendicular bisector of \overline{AB} ?



28.

The diagram below shows the construction of \overline{AB} through point P parallel to \overline{CD} .

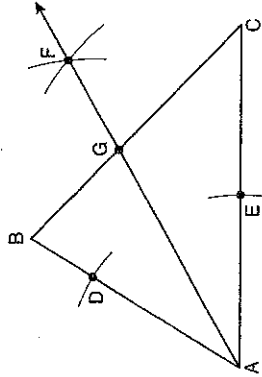


Which theorem justifies this method of construction?

- A. If two lines in a plane are perpendicular to a transversal at different points, then the lines are parallel.
- B. If two lines in a plane are cut by a transversal to form congruent corresponding angles, then the lines are parallel.
- C. If two lines in a plane are cut by a transversal to form congruent alternate interior angles, then the lines are parallel.
- D. If two lines in a plane are cut by a transversal to form congruent alternate exterior angles, then the lines are parallel.

29.

As shown in the diagram below of $\triangle ABC$, a compass is used to find points D and E , equidistant from point A . Next, the compass is used to find point F , equidistant from points D and E . Finally, a straightedge is used to draw \overline{AF} . Then, point G , the intersection of \overline{AF} and side \overline{BC} of $\triangle ABC$, is labeled.



Which statement must be true?

- A. \overline{AF} bisects side \overline{BC}
- B. \overline{AF} bisects $\angle BAC$
- C. $\overline{AF} \perp \overline{BC}$
- D. $\triangle ABG \sim \triangle ACG$