

UNIT 1A

REVIEW

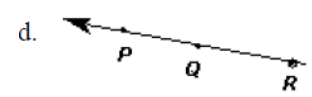
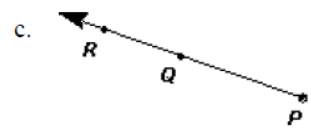
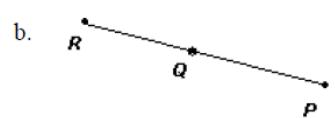
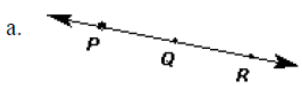
1. When constructing a line, through a point, parallel to a given line, you will be

A) Copying an angle.
 B) Copying a segment.
 C) Bisecting a segment.
 D) Constructing a perpendicular.

2. The task of constructing a perpendicular to a given line at a point on the line is based upon which other construction?

A) The bisector of a segment.
 B) A perpendicular from a point off the line.
 C) The copy of a segment.
 D) The copy of an angle.

3. \overrightarrow{PR} is represented by which sketch?

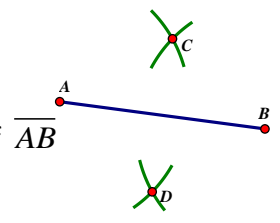


4. Segment \overline{CD} is the perpendicular bisector of \overline{AB} at E . Which pair of segments does *not* have to be equal?

(a) \overline{AB} , \overline{BD} (b) \overline{AE} , \overline{BE}
 (c) \overline{AC} , \overline{BC} (d) \overline{DE} , \overline{CE}

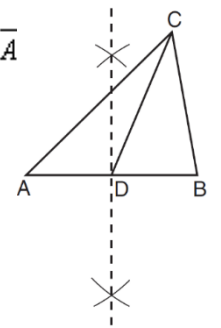
5. A teacher finds a paper on the ground in the classroom. When she looks at it carefully she realizes it is from her geometry class because it has a construction on it. Which of the following constructions is **NOT FOUND** directly from this student's work?

- A) The midpoint of \overline{AB}
 B) The perpendicular bisector of \overline{AB}
 C) A perpendicular line to \overline{AB}
 D) The angle bisector of $\angle CAB$



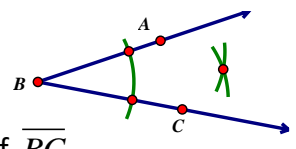
6. In the construction shown below, \overline{CD} is drawn. In $\triangle ABC$, \overline{CD} is the

- a) perpendicular bisector of side \overline{AB}
 b) median to side \overline{AB}
 c) altitude to side \overline{AB}
 d) bisector of $\angle ACB$



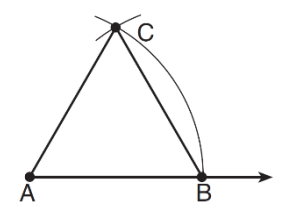
7. Which construction is represented by these construction marks?

- A) Copying $\angle ABC$
 B) The perpendicular bisector of \overline{BC}
 C) The angle bisector of $\angle ABC$
 D) A perpendicular line \overline{AC}



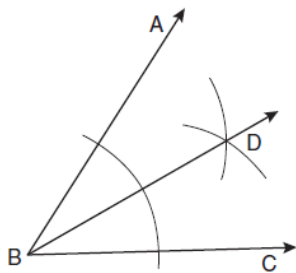
8. The diagram below shows the construction of an equilateral triangle. Which statement justifies this construction?

- a) $\angle A + \angle B + \angle C = 180$
 b) $m\angle A = m\angle B = m\angle C$
 c) $AB = AC = BC$
 d) $AB + BC > AC$



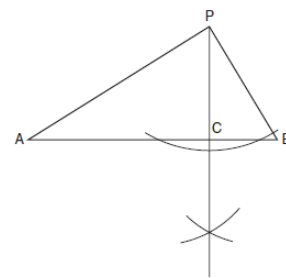
9. Based on the construction below, which statement must be true?

- 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) $m\angle CBD = \frac{1}{2} m\angle ABD$



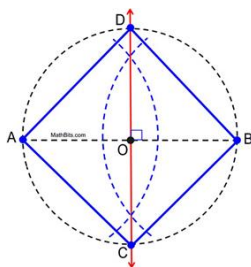
10. In the accompanying diagram of a construction, what does \overline{PC} represent?

- a) an altitude drawn to \overline{AB}
- b) a median drawn to \overline{AB}
- c) the bisector of $\angle APB$
- d) the perpendicular bisector of \overline{AB}



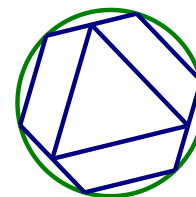
11. When inscribing a square in a circle, you are relying on which fact about squares?

- a) They contain four right angles.
- b) They have opposite angles \cong .
- c) The diagonals are \cong and \perp .
- d) The diagonals bisect the angles



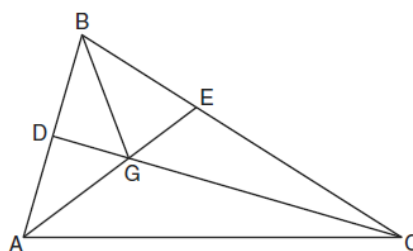
12. Given the diagram, determine the description, which is *false*.

- A) The circle circumscribes the hexagon.
- B) The hexagon circumscribes the triangle.
- C) The hexagon is inscribed in the circle.
- D) The triangle is inscribed in the circle.



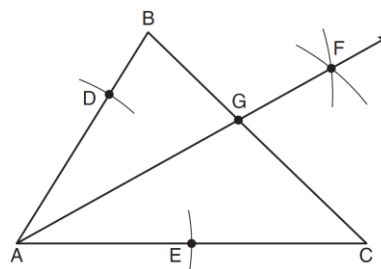
13. In the diagram below of $\triangle ABC$, \overline{CD} is the bisector of $\angle BCA$, \overline{AE} is the bisector of $\angle CAB$, and \overline{BG} is drawn. Which statement must be true?

- a) $DG = EG$
- b) $AG = BG$
- c) $\angle AEB \cong \angle AEC$
- d) $\angle DBG \cong \angle EBG$

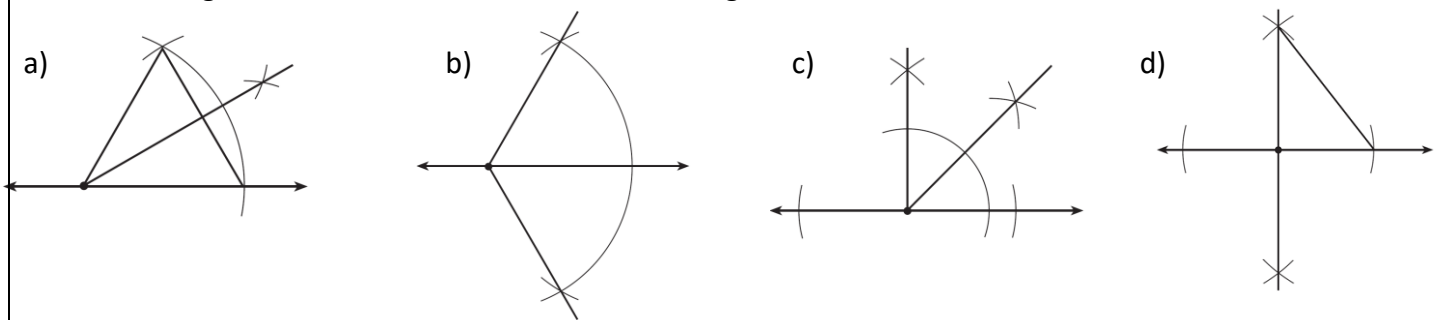


14. As shown in the diagram below of $\triangle ABC$, a compass is used to find points D and E , equidistant from point A . Next, the compass is used to find point F , equidistant from points D and E . Finally, a straightedge is used to draw \overline{AF} . Then, point G , the intersection of \overline{AF}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

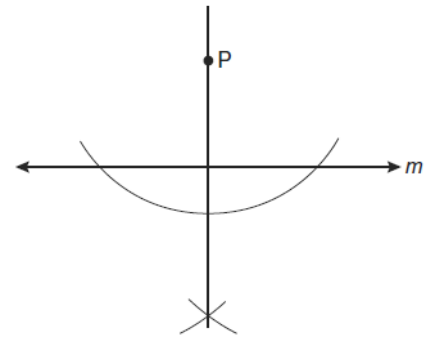


15. Which diagram shows the construction of a 45° angle?

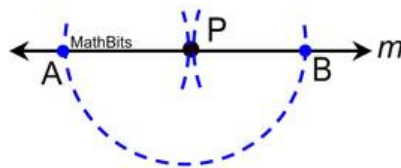


16. The diagram below shows the construction of a line through point P perpendicular to line m . Which statement is demonstrated by this construction?

- a) If a line is parallel to a line that is perpendicular to a third line, then the line is also perpendicular to the third line.
- b) The set of points equidistant from the endpoints of a line segment is the perpendicular bisector of the segment.
- c) Two lines are perpendicular if they are equidistant from a given point.
- d) Two lines are perpendicular if they intersect to form a vertical line.



17. Alison is attempting to construct a perpendicular to line m at point P . She placed her compass point at P and drew the arc intersecting the line at two points she labeled A and B . She then placed her compass at point A and made an arc, and at point B and made an arc. Unfortunately, her arcs are tangent to one another at point P . She does not have two points to connect to form the perpendicular. What did she do wrong?



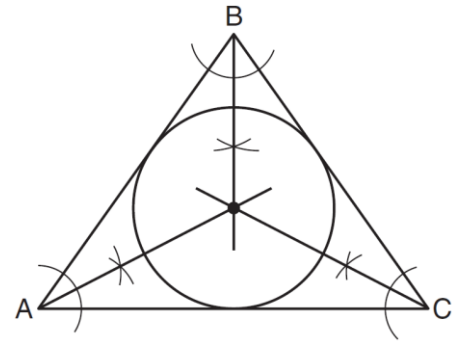
- a) Alison needed to place her compass point at P to draw two intersecting arcs.
- b) Alison needed to make one of the arcs larger so they will intersect.
- c) Alison needed to increase the span on her compass after drawing the first arc.
- d) Alison is not wrong - she just needed to eyeball the line through point P

18. When preparing the construction of a regular hexagon inscribed in a circle, which of the following statements is **NOT** true?

- a) The length of the radius of the circle becomes the length of each side of the hexagon.
- b) The interior angles of the hexagon each contain 60° .
- c) A series of 6 congruent equilateral triangles can be formed in the interior of the hexagon.
- d) The perimeter of the hexagon is equal in length to the length of three diameters of the circle.

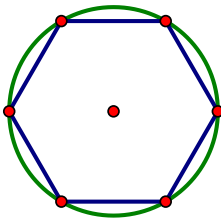
19. Which geometric principle is used in the construction shown below?

- a) The intersection of the angle bisectors of a triangle is the center of the inscribed circle.
- b) The intersection of the angle bisectors of a triangle is the center of the circumscribed circle.
- c) The intersection of the perpendicular bisectors of the sides of a triangle is the center of the inscribed circle.
- d) The intersection of the perpendicular bisectors of the sides of a triangle is the center of the circumscribed circle.

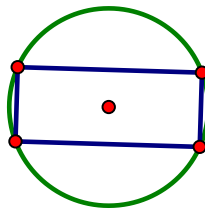


20. Determine whether the relationship is INSCRIBED or CIRCUMSCRIBED.

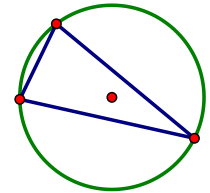
The hexagon is _____



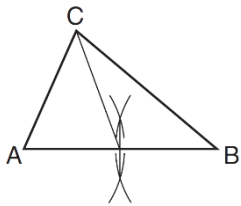
The circle is _____

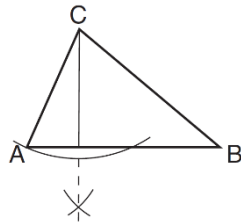


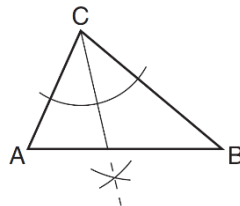
The triangle is _____

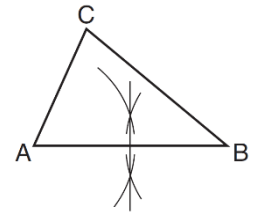


21. Identify each construction below



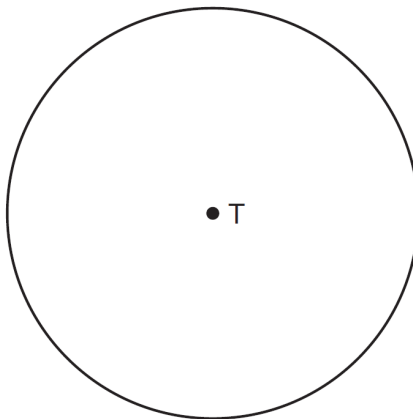




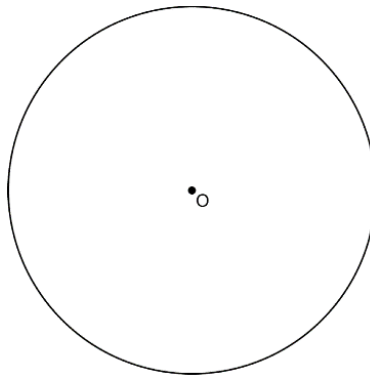


CONSTRUCTION PRACTICE!

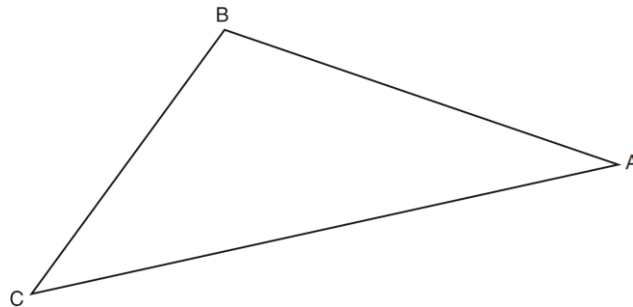
1. Construct an equilateral triangle inscribed in circle *T* shown below. [Leave all construction marks.]



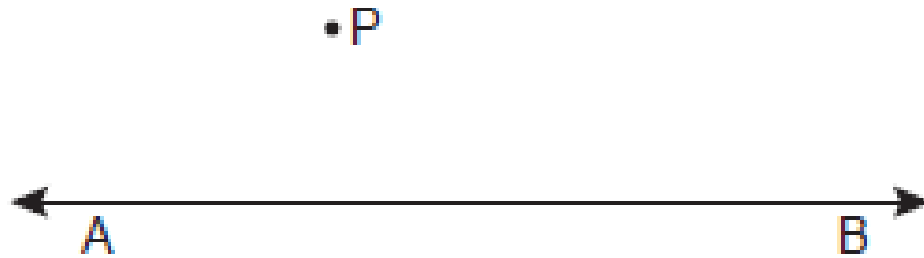
2. Using a compass and straightedge, construct a regular hexagon inscribed in circle O . [Leave all construction marks.]



3. Using a compass and straightedge, construct the bisector of $\angle CBA$. [Leave all construction marks.]



4. Construct the line that is parallel to line \overline{AB} and passes through point P.



5. Using a compass and straightedge, construct a line perpendicular to m through point P . [Leave all construction marks.]

• P



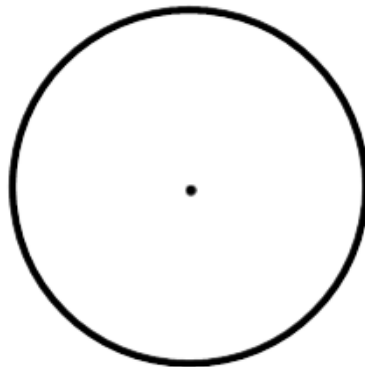
6. Using a compass and straightedge, construct a line perpendicular to \overline{AB} through point P . [Leave all construction marks.]



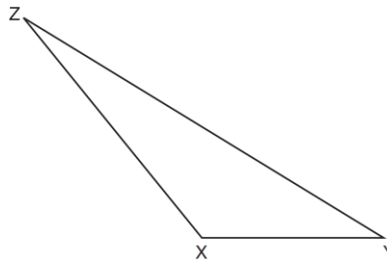
7. Construct a *rectangle* given the segment below.



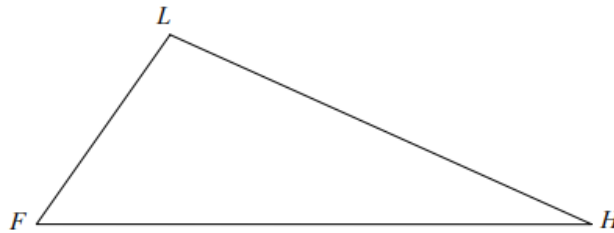
8. Construct a *square* inscribed in a circle



9. Triangle XYZ is shown below. Using a compass and straightedge, on the line below, construct and label $\triangle ABC$, such that $\triangle ABC \cong \triangle XYZ$. [Leave all construction marks.]



10. Using a compass and straightedge, construct the altitude to FH . Label it A . [Leave all construction marks.]



11. Using a compass and straightedge, construct the median to FH . Label it M . [Leave all construction marks.]

