

Self-Test 1, Page 390

- Const. 4
- Draw \overline{ST} . With ctrs. S and T , and radius ST , draw arcs int. at R . Draw \overline{SR} ; $m\angle RST = 60$. Use Const. 3.
- Const. 6
- Const. 7
- Methods may vary. Const. \overline{JK} such that $JK = 2AB$ (Const. 1). Const. lines \perp to \overline{JK} at J and K . Const. $\overline{JM} \cong \overline{KL} \cong \overline{AB}$. Draw \overline{ML} .
- lines that contain the altitudes, medians, \angle bis., \perp bis. of the sides
- midpt. of the hyp.
- $4\sqrt{3}$, $2\sqrt{3}$

Mixed Review Exercises, Page 391

- 12
- tan., 10
- 3
- 141

Written Exercises, Pages 395–396

- Const. 8
- Const. 10
- Const. 10
- Const. 11
- Draw $\odot O$ with radius r . Choose pt. A on $\odot O$, and with ctr. A and radius r , mark off \widehat{AB} . With ctr. B and radius r , mark off \widehat{BC} . Similarly, mark off \widehat{CD} , \widehat{DE} , and \widehat{EF} . Draw \overline{AC} , \overline{EC} , and \overline{AE} .
- a. Draw $\odot O$. Draw diam. \overline{AE} . Const. \perp diam. \overline{CG} . Bis. 2 adj. rt. \angle s to form 8 \cong arcs. Connect consec. pts. to form octagon $ABCDEFGH$. b. Draw overlapping squares $ACEG$ and $BDFH$.
- Draw the diags. of the square int. at O . Draw the \odot with ctr. O and radius = half the length of a diag.
- Divide the \odot into 6 \cong arcs as in Ex. 9. At every other pt., const. a tan. to the \odot .
- Const. a \parallel to l through O , int. $\odot O$ at P . Const. a tan. to $\odot O$ at P .

Written Exercises, Page 399

- Const. 12
- b. No
- Let the 5 \cong seg. from Ex. 3(a) be \overline{AW} , \overline{WX} , \overline{XY} , \overline{YZ} , and \overline{ZB} . $AX:XB = 2:3$
- Const. 13
- Const. 14
- Use $\frac{z}{w} = \frac{y}{x}$ or $\frac{z}{y} = \frac{w}{x}$ with Const. 13.
- Const. 14, 12
- Const. 1, 14
- Draw a line and const. \overline{AB} so that $AB = 3$ and \overline{BC} so that $BC = 5$. Use Const. 14.
- Divide \overline{CD} into 7 \cong parts: \overline{CU} , \overline{UV} , \overline{VW} , \overline{WX} , \overline{XY} , \overline{YZ} , and \overline{ZD} . Then $CV:VX:XD = 2:2:3$. Use SSS to const. a Δ .

Self-Test 2, Page 401

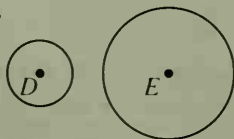
- Const. 9
- Const. 11
- Use Const. 12 to divide a seg. \overline{AB} into 3 \cong parts, \overline{AX} , \overline{XY} , and \overline{YB} . Then $AY:YB = 2:1$.
- Const. 13
- Const. 14
- \perp , F , \perp , G
- Const. the \perp bis. of 2 sides of $\triangle TRI$, int. at O . Draw a \odot with ctr. O and radius OT .

Written Exercises, Pages 404–405

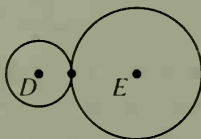
- the \perp bis. of \overline{AB}
- 2 \parallel lines 4 cm apart with h halfway between them
- the seg. joining the midpts. of \overline{AD} and \overline{BC}
- diag. \overline{BD}
- a plane \parallel to both planes and halfway between them
- a sphere with ctr. E and radius 3 cm
- a. Use Const. 3 to bis. $\angle HEX$. b. Use Const. 3 to bis. the \angle formed by j and k ; locus is 2 \perp lines.
- Const. the \odot with diameter AB , and exclude pts. A and B .
- Const. 2 \odot s with radius EF , one with ctr. E and one with ctr. F , and exclude pts. E and F and the other 2 pts. of the int. of the \odot s with \overline{EF} .
- a line \perp to the plane of the square at the int. of the diags.

Written Exercises, Pages 407–410

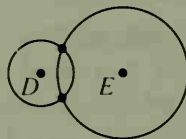
- a. \perp bis. of \overline{AB} int. $\odot O$ in 2 pts. b. \perp bis. of \overline{AB} doesn't int. $\odot O$. c. \perp bis. of \overline{AB} is tan. to $\odot O$.
- a. a \odot with ctr. D and radius 1 cm b. a \odot with ctr. E and radius 2 cm c.



$DE > 3$ cm



$DE = 3$ cm



$DE < 3$ cm

d. The locus is 0, 1, or 2 pts., depending on the int. of $\odot D$ and $\odot E$.

- the int. of $\odot P$, with radius 3 cm, and l (2 pts.)
- the int. of $\odot A$, with radius 2 cm, and $\odot B$, with radius 2 cm (2 pts.)
- the int. of $\odot A$, with radius 2 cm, and the bis. of $\angle A$ (1 pt.)
- 0, 1, or 2 pts.
- 0 pts., 1 pt., or a \odot
- 2 \odot s
- 0 pts. ($d > 5$), 2 pts. ($d = 5$), 2 \odot s ($d < 5$)
- a. the \perp bis. plane of \overline{RS} b. the \perp bis. plane of \overline{RT} c. line, line d. the \perp bis. plane of \overline{RW} e. pt., pt.
- a. infinitely many b. 2 c. none