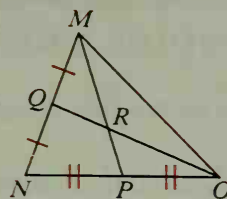


8. The   ? of a triangle intersect in a point that is equidistant from the vertices of the triangle.
9. The   ? of a triangle intersect in a point that is equidistant from the sides of the triangle.
10. If  $MR = 12$ , then  $MP =$    ?.
11.  $QR:RO =$    ? (numerical answer)



Exs. 10, 11

10-3

Draw a large  $\odot O$ . Label a point  $F$  on  $\odot O$  and a point  $G$  outside  $\odot O$ .

12. Construct the tangent to  $\odot O$  at  $F$ .
13. Construct a tangent to  $\odot O$  from  $G$ .
14. Draw a large acute triangle. Find, by construction, the center of the circle that could be inscribed in the triangle.
15. Draw a large obtuse triangle. Construct a circle that circumscribes the triangle.

10-4

Draw segments about as long as those shown below. In each exercise, construct a segment with the required length  $t$ .



16.  $t^2 = bc$
17.  $at = bc$
18.  $t = \frac{1}{3}(a + b)$
19. Given two parallel lines  $l$  and  $m$ , what is the locus of points in their plane and equidistant from them?
20. Given two points  $A$  and  $B$ , what is the locus of points, in space, equidistant from  $A$  and  $B$ ?
21. What is the locus of points in space equidistant from two parallel planes?
22. What is the locus of points in space that are equidistant from the vertices of equilateral  $\triangle HJK$ ?
23. Points  $P$  and  $Q$  are 6 cm apart. What is the locus of points in a plane that are equidistant from  $P$  and  $Q$  and are 8 cm from  $P$ ? Sketch the locus.
24. Point  $R$  is on line  $l$ . What is the locus in space of points that are 8 cm from  $l$  and 8 cm from  $R$ ?
25. What is the locus of points in space that are 1 m from plane  $Q$  and 2 m from point  $Z$  not in  $Q$ ? (There is more than one possibility.)

10-5

10-6

10-7

Use the segments with lengths  $a$ ,  $b$ , and  $c$  that you drew for Exercises 16-18.

26. Construct an isosceles right triangle with hypotenuse of length  $a$ .
27. Construct a  $\triangle RST$  with  $RS = a$ ,  $RT = c$ , and the median to  $\overline{RS}$  of length  $b$ .

10-8